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JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

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THE 84th ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN DALLAS, TEXAS, 1936.

The 1936 Meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, Conference of Pharmaceutical Association Secretaries, of the Pharmaceutical Law Enforcement Officials and the Plant Science Seminar will also be held in Dallas, Texas.

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1929

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GEORGE D. BEAL, PRESIDENT-ELECT A. PH. A.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XXV FEBRUARY, 1936 No. 2

GEORGE DENTON BEAL.

George Denton Beal, member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1907, and President-Elect of the ASSOCIATION, was born in Scio, Ohio, August 12, 1887, the son of James Hartley Beal[1] and Fannie Snyder (Young) Beal. After concluding his preliminary education he entered Scio College of Pharmacy, where, in 1906, he earned the degree of Ph.C. Continuing his studies at this institution he received the degrees of Ph.B. and Pharm.D. In 1910, he entered Columbia University as the Richard Butler Scholar in Chemistry, receiving, in course, the degrees of A.M. and of Ph.D., from the University.

Following the completion of these studies Dr. Beal was appointed Instructor in Chemistry at the University of Illinois; he held this position until 1914, when he was advanced to Associate in Chemistry at the same institution. Herein he served until 1918, when he was elected Assistant Professor of Chemistry, which position he held until 1920. He was then named Associate Professor of Analytical and Food Chemistry and thereafter, until 1926, he occupied the *Chair* of Analytical and Food Chemistry. In the latter year he received the appointment as Assistant Director at Mellon Institute of Industrial Research, which position he still holds.

Dr. Beal was awarded the Ebert Prize in 1920. The paper specifically mentioned for the honor was "The Shaking-Out Method for the Quantitative Estimation of Alkaloids," read before the New York meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1919 and published in the January JOURNAL for 1920, pages 9–15. His research on "Anthraquinone Drugs" is well and favorably known and other lines of work might be mentioned in this connection, but this would extend the sketch beyond its purpose.[2]

His activities have associated him with pharmaceutical and chemical organizations. He was First Vice-President of the A. PH. A. in 1934–1935; he is a member of the American Chemical Society, *fellow* of the American Association for the Advancement of Science, *fellow* of the American Health Association, member of the American

[1] President of the AMERICAN PHARMACEUTICAL ASSOCIATION, 1904–1905.

[2] See indexes of JOURNAL A. PH. A. beginning with Volume V and succeeding numbers.

Society for Testing Materials, National Conference of Pharmaceutical Research, Pennsylvania Academy of Science, member of the Board of Directors of Pittsburgh College of Pharmacy, Honorary member of Illinois State Pharmaceutical Association.

The Philadelphia College of Pharmacy conferred on him the honorary degree of Ph.M. and Mt. Union College honored him with the degree of Sc.D.

He is a member of Phi Lambda Upsilon, Honorary Chemical Society, and was its national president, 1917–1919; he is a member of Alpha Chi Sigma, Lambda Chi Alpha, Gamma Alpha, Sigma Xi, University Club of Pittsburgh, Churchill Valley Golf Club; Chemists' Club of New York. Dr. Beal was a collaborating member of the Committee of Revision, U. S. Pharmacopœia X and a member of the Committee of Revision, U. S. Pharmacopœia XI; chairman of the Sub-Committee on Organic Chemicals. From 1922–1927 he was chairman of the Sub-Committee on "Anthraquinone Drugs," Committee on Medicinal Products, Division of Chemistry of the National Research Council.

Dr. Beal married Miss Edith Downs, July 3, 1912, at Scio, Ohio; two children, George Denton Beal, Jr., and Marjorie Downs Beal have brightened their home.

Exhibit of Drugs and Preparations of the United States and of National Formulary by Columbia University College of Pharmacy.—On the occasion of the meeting of the Military Surgeons Assocation of the United States held in New York City, October 3rd–5th at the Waldorf-Astoria.

The display on the left was made up of U. S. P. and N. F. drugs; the second group consisted of useful Preparations; the next of Prescriptions, containing official drugs, and the fourth section displayed Dental Drugs and Preparations.

A page of the *Military Surgeon* for December shows 20 displays on all phases of military medicines and among them the exhibit referred to in the foregoing.

EDITORIAL

E. G. EBERLE, EDITOR 2215 Constitution Ave., WASHINGTON, D. C.

THE HEALTH OF THE PEOPLE.

THE government has not been unmindful of the services of the professions engaged in public health service, but there is possibility of coördinating the work, whereby the health of the citizens will receive better protection. The work of the government divisions is outstanding and the education of the public by the publicity given is worthy of most favorable comment, but with all of that pharmacy could more effectively enter the field and prove its value; this to a certain extent may be the fault of pharmacists. There is evidence, however, of great progress in the movements to promote professional pharmacy. Efforts to increase the representation in the various government services are meeting with encouragement and it remains for pharmacists to prove the need for pharmacy in the various activities and for pharmacists to meet these opportunities.

There is greater need for pharmacists in hospitals to be represented as essential in the service and also greater evidence of pharmacy in public life. An article by Dean Edward Spease on Minimum Standards for a Hospital Pharmacy appears in the January JOURNAL.

BRITISH AND AMERICAN PHARMACY.

IT IS gratifying to note the interest of the British pharmaceutical publications in the U. S. Pharmacopœia and National Formulary. Dr. C. H. Hampshire is reviewing the U. S. P. XI in the *Pharmaceutical Journal* of the Pharmaceutical Society of Great Britain. This coöperation is welcomed not only as an evidence of the professional relations, but because it will be of value in the interim and decennial revisions and thereby to pharmacy on both sides of the Atlantic. The *Pharmaceutical Journal* comments:

"It is probable that much more interest will be taken in the future by British pharmacists in the decennial revisions of the United States Pharmacopœia than has been the case in the past. The sub-committee which in 1928 reported on the changes that it considered should be made in the preparation of the British Pharmacopœia, suggested that active coöperation with the compilers of the U. S. P. might be effected, and some coördination made in order that successive issues of one pharmacopœia should appear mid-way in the intervals between the issues of the other pharmacopœia. This interchange of views has been practiced by the present Pharmacopœia Commission, through the respective secretaries, and an acknowledgment of its value to the Committee of Revision of the U. S. P. is made in the following terms in the preface to the new United States Pharmacopœia:

"A gratifying feature of the revision work of this decade has been the close coöperation between the British Pharmacopœia Commission and the Committee of Revision of the United States Pharmacopœia. The free exchange of reports and discussions, the coöperative researches on important subjects, and an effort to harmonize the titles and standards of the two pharmacopœias have characterized the period. This program should greatly benefit both books and lead to a greater degree of perfection in official standards."

NATIONAL FORMULARY VI.

THE *Chemist and Druggist*, of February 1st, reviews the National Formulary, giving a full page to the subject. The opening paragraph states that "the

issue in the United States of a new edition of 'The National Formulary' is an event awaited with pleasurable expectation in many countries."

The review continues with a general comment, an appreciation of the compilers and the evident care in the preparation of the Formulary. The comprehensive review outlines the work in a way that gives the readers information relative to the plan and scope of this revision. The publications have exhibited the professional spirit, which should obtain within the professions in rendering service.

The review concludes: "N. F. VI worthily sustains the reputation of earlier editions, and forms a book of reference indispensable to the serious student of formularies."

Thanks are extended the reviewers with hopeful wishes for continued and strengthened reciprocal relations.

INTERNATIONAL PHARMACY COÖPERATION.

IN THIS issue of the JOURNAL two articles of foreign contributors are published, one by the director of the Department of Pharmacology of Masaryk University Medical School and the other is from the Department of Pharmacology, National University of Mexico.

Chairman E. Fullerton Cook refers to Pan-American Coöperation in his comprehensive article[1] on "A Pharmacopœia for To-day's Needs." He states:

"It is gratifying to announce that the Pan-American Sanitary Bureau, through its director, Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service and its Assistant Director, Dr. Boliver J. Lloyd, and their staff, have undertaken the translation of the U. S. P. XI into Spanish as an official activity of the Bureau. It is hoped that the Spanish edition will be available by April next when a large Pan-American Medical Congress will be held in this country.

"It is also expected that the medical articles on the use of official medicines, appearing in the *A. M. A. Journal*, will be translated into Spanish and reprinted in the official Bulletin of the Bureau for circulation through the twenty-one republics affiliated in the Pan-American program.

"It should be understood, however, that the policy of the U. S. P. Board of Trustees in translating the U. S. P. into Spanish now for four decades has been primarily that it might be available to pharmacists and physicians in Porto Rico, the Philippines and in Cuba. In the latter republic the U. S. P. has been adopted as the official Pharmacopœia for more than thirty years and has been made possible through these years by the coöperation of the pharmacists of Cuba and the help of the scientific staff of the University of Havana and especially Dr. José Guillermo Diaz.

"In the present revision Auxiliary Commissions from Cuba, Porto Rico and the Philippines have been participating in the revision (see the U. S. P. XI, page viii).

"It is expected that each of the other republics affiliated with the Pan-American Union will eventually issue their own Pharmacopœia as is now done by Mexico, Brazil, the Argentine and others, but in offering the U. S. P. in Spanish it has been hoped that increased uniformity in nomenclature, tests and standards will be secured on this continent."

[1] An address before New York Branch, AMERICAN PHARMACEUTICAL ASSOCIATION, January 13th.

SCIENTIFIC SECTION

BOARD OF REVIEW OF PAPERS.—*Chairman*, F. E. Bibbins; Glenn L. Jenkins, John C. Krantz, Jr., Heber W. Youngken, L. W. Rowe, L. W. Rising, C. O. Lee, E. V. Lynn, W. G. Crockett, Frederick V. Lofgren.

A MODIFIED ASSAY FOR SOLUTION OF MAGNESIUM CITRATE.*

BY W. F. REINDOLLAR AND H. E. CHANEY.

Although Solution of Magnesium Citrate has enjoyed official status since 1850, it was not until the appearance of the ninth decennial revision of the Pharmacopœia, in 1916, that an assay was provided. This assay, which is practically identical with the present one, is unsatisfactory in several respects. It requires evaporation of the solution to dryness and subsequent charring of the organic material prior to precipitating the magnesium. This is a cumbersome procedure and, unless extreme care is exercised, will be attended by loss of superheated particles which are ejected with explosive violence. Furthermore, a long period of standing followed by drying and ignition of the precipitate is directed, which greatly lengthens the time period required for a single determination.

Various suggestions have been made to simplify and shorten this procedure. Noteworthy is that of Mayer (1), verified by Haussmann (2), in which the original sample is diluted with distilled water and acidified, and precipitation is effected without recourse to a preliminary drying and charring. The practicability of this phase of the determination has been so thoroughly demonstrated that it has been accepted as part of the assay for solution of magnesium citrate in the forthcoming Pharmacopœia (3).

Recently J. P. Mehlig published a method (4) for determining magnesium as magnesium ammonium phosphate hexahydrate. The method involves the precipitation of this compound in the usual manner, its subsequent filtration and washing with dilute ammonium hydroxide, alcohol and ether on a Gooch crucible, drying in a desiccator for twenty minutes, and weighing. Compared with the ignition method this procedure, to quote the author, "is more rapid, less tedious, and more easily carried out, and there is no black residue." With a view to further simplifying the official assay a comparative study of this method and the Pharmacopœial determination was made. A dozen samples of solution of magnesium citrate, purchased in the open market and submitted to the Bureau of Chemistry during July and August were assayed by the U. S. P. XI procedure and by that of Mehlig. The results are tabulated on page 96.

DISCUSSION OF RESULTS.

These results confirm the findings of Mehlig and demonstrate the applicability of his procedure to the official solution of magnesium citrate. Since there is no ignition, care must be observed to have the portion taken for analysis free from any insoluble extraneous material of an organic nature. If necessary filtration of the product must be resorted to. This was not found necessary for any of the samples examined.

* Bureau of Chemistry, State of Maryland, Department of Health.

TABLE I.

Sample.	MgO as $Mg_2P_2O_7$.	MgO as $MgNH_4PO_4.6H_2O$.	Deviation.
4115 D	1.529	1.543	+0.014
4154 D	1.542	1.546	+0.004
4162 D	1.566	1.563	−0.003
4191 D	1.689	1.695	+0.006
4192 D	1.739	1.732	−0.007
4205 D	1.533	1.540	+0.007
4206 D	1.515	1.519	+0.004
4237 D	1.585	1.575	−0.010
4260 D	1.825	1.840	+0.015
4280 D	1.600	1.610	+0.010
4288 D	1.872	1.875	+0.003
4311 D	1.552	1.561	+0.009

SUMMARY.

A comparative study has been made of the U. S. P. XI and the magnesium ammonium phosphate hexahydrate methods in the assay of solution of magnesium citrate.

The latter has been found to be sufficiently accurate, and is more rapid, and less tedious than the official procedure.

REFERENCES.

(1) Mayer, J. L., JOUR. A. PH. A., 9, 253 (1920).
(2) Haussmann, H. W., *Am. J. Pharm.*, 103, 44 (1931).
(3) Page Proof, U. S. P. XI, page 218.
(4) Mehlig, J. P., *J. Chem. Ed.*, 12, 288 (1935).

A FURTHER NOTE ON THE STABILITY OF SODIUM SULPHITE.

BY A. H. CLARK AND SOLOMON GERSHON.*

Reports have previously been made[1,2] on this subject and since quite a number of the specimens of sulphite are still in existence a final report is presented on their condition in March 1935. Some of these samples are twenty-three years old and none less than twenty-one years old. The final result is tabulated below and shows the condition of the samples after all these years of storage in a cupboard in the laboratory. Special comment is made in a few cases. Complete data on each sample may be had by reference to the original articles.

The method of assay used in 1935 was that of the U. S. P. IX, the same method originally used.

CONTENT OF Na_2SO_3.

Manufacturer.	No.	Original.	1914.	1916.	1935.	Container.
A	2	90.80	91.40	90.89	91.03	Paper
A	4	90.80	90.84	89.50	80.09	Glass
A[1]	6	45.19	45.19	39.50	1.37	Tin can

* University of Illinois College of Pharmacy, Chicago, Illinois.

[1] *Druggists Circular*, 58, 8, 456 (Aug. 1914).

[2] *Ibid.*, 60, 7, 396 (July 1916).

B	1	92.04	92.60	91.52	73.80	Tin can
B	2	96.44	96.44	97.17	92.20	Tin can
C[2]	1	94.74	93.91	92.61	91.84	Paper
D	1	84.70	84.70	84.28	82.54	Paper
F	1	...	94.22	93.00	91.50	Tin can
F	2	92.33	91.76	91.05	90.38	Tin can
F	4	92.50	91.84	91.34	90.67	Glass
G	1	...	86.27	86.36	86.08	Glass

[1] Sample A, 6, was originally a crystalline sulphite purchased in a tin can. In May 1916, it was still in good physical condition but had lost about 12.50 per cent. In 1916 a part of the sample was placed in a glass-stoppered bottle, the remainder left in the original can. The assay given above is for the *crystals placed in the bottle*, and shows almost entire loss of sulphite. Strange as it may seem the sample remaining in the can assayed in 1935 59.00 per cent sulphite. On careful inspection this sample was a fine powder, no crystals whatever. The high content of sulphite is no doubt due to the fact that the can was not air tight and the crystals dried out during the twenty years of storage and this drying process outstripped the deterioration process, thus rendering the remaining portions of the sample more and more stable as the drying went on, the final result being a stable fully dried sulphite. Based upon crystalline sulphite instead of dried, 59.00 per cent would mean about 30 per cent Na_2SO_3 so the actual loss of sulphite was considerable, aside from the loss of water which is always an economic one.

[2] Sample C, 1. In 1935 this specimen was found uncovered and very dirty on top, but in spite of this the loss of sulphite was not great.

One may conclude very definitely from the above that a dried sodium sulphite will keep, certainly for three years, probably for five or six years and in some cases as long as twenty years; that crystalline sodium sulphite loses sulphite rapidly, the loss ranging from 12.5 per cent to 100 per cent in two years; that a paper carton or tin can is as safe a container as a glass bottle; that a photographic quality, a U. S. P. quality or an unbranded article is likely to be just as good as an expensive grade.

THE IMPORTANCE OF THE KIDNEYS IN THE STANDARDIZATION OF DIGITALIS.

BY B. BOUČEK.*

The directions in the official publication of the League of Nations for the standardization of digitalis by the method of Hatcher and Brody, as modified by Magnus, require that pregnant cats and those having pneumonia shall not be used for the standardization. It is not explained why such animals are unsuitable, and I have been unable to find elsewhere any statement that any functional or pathological change in any organ influences the result of the test.

It is well known that some individual cats are especially resistant to the toxic action of digitalis. This fact has been confirmed by McFarlane and Masson[1] who state: "Apparently, it represents a separate group of cats which has greater resistance to the toxicity of digitalis and consequently lessens the reliability of this method of assay of the drug unless a large number of animals be done for each estimation."

* Director of the Department of Pharmacology of Masaryk University, Medical School, Brno Uvoz 33, Č. S. R., Europe.

[1] McFarlane, A., and Masson, G. A., *J. Pharmacol. and Exper. Therap.*, 30, 293 (1927).

We have observed in rare cases differences of about 50 per cent compared with the average minimum lethal dose; some weak and cachectic animals having manifested great resistance. For example, a twelve-year old cat which had chronic bronchitis, calcifications, emphysema of the lungs, a follicular tumor of the spleen, and fatty degeneration of the liver and kidneys, as shown at the post-mortem examination, required 25 per cent more than the average fatal dose to cause death.

Other animals did not suffer from such a variety of pathological conditions, but in every case where great resistance to digitalis was observed pathological changes were found in the kidneys. Only occasionally was there observed any such influence due to pathological changes in the lungs and liver, or to pregnancy. This is shown in the following table.

Table I shows the effects of pregnancy and pathological changes in organs on the toxicity of digitalis for the cat.

TABLE I.

	Resistance.	
Lungs	−13 till	−40 per cent
Liver	−40	per cent average
Kidneys	+30	per cent average
Pregnancy	−30 till	−60 per cent

The variation in the lethal dose is slight in healthy animals, not more than about 10 per cent in our experiments. Many of the animals which are delivered to our department are in bad health, most of them being infested with hookworm. This is also true in America. All animals are now treated with a vermifuge, and they are kept under good conditions for some time before they are used for experiments. In every case where an animal shows increased resistance, it is found that the animal had nephritis.

TABLE II.—SHOWS THE EFFECTS OF VARIOUS MEASURES ON THE RESISTANCE OF CATS TO THE TOXIC ACTION OF DIGITALIS.

Treatment.	Number of Animals.	Resistance.	Remarks.
Acute uranium nephritis	11	30% higher	Only one injection of 1.8 to 2.8 mg. $UO_2(NO_3)_2$ per Kg.
Chronic uranium nephritis	5	Without change	½ cc. solution $UO_2(NO_3)_2$ 1–400 every fifth day
Bilateral nephrectomy	11	18% higher	18–96 hours after nephrectomy
Ligature of blood vessels	3	Without change	Immediately after tying
Ligature in cases of inflammation of the kidneys	1	27% higher	Immediately after tying
Ligature of both ureters	5	Without change	.....
Digitalis with urea	6	20% higher	0.25–1.4 Gm./Kg.
Digitalis with NH_4Cl	6	20% lower	Isotonic concentration with digitalis

This observation led us to determine the resistance of animals to digitalis under the following conditions: (*a*) In those in which experimental uranium

nephritis had been induced; (*b*) after nephrectomy; (*c*) after tying the renal arteries; (*d*) after tying both ureters. It is interesting to observe that our cats required smaller doses of uranium nitrate than rabbits or guinea pigs.

The tabulated results show that the condition of the kidneys is a very important factor in the determination of the action of digitalis on the heart, and that this factor must not be neglected in the biological standardization of preparations of digitalis.

The immediate cause of the increased resistance to digitalis in the presence of inflammation of the kidneys cannot be determined by the results of the experiments described in this paper.

SUMMARY.

1. The resistance of cats to lethal doses of digitalis is increased by experimentally induced uranium nephritis.

2. Greater resistance to digitalis was observed in cases of inflammation of the kidneys which occurred naturally. This condition is often observed in cats.

3. This increased resistance must be considered, and only those cats which are free from pathological changes in the kidneys must be used in the Hatcher-Magnus method of standardizing digitalis.

EDITOR'S NOTE: We are indebted to Robert A. Hatcher, M.D., of the Department of Pharmacology, Cornell University Medical College, New York, for assistance in the preparation of this paper for publication.

ACTION OF TESTICULAR HORMONE ON THE DEVELOPMENT OF THE HEN'S COMB.*

BY DRS. E. RAMIREZ AND M. D. RIVERO.

Biological control, that is to say, the experimental production of a specific reaction on an animal or on living tissues, permits us to obtain active extracts of endocrine glands, as long as we can rely on a method revealing the activity of the various extracts and the different fractions, solutions and residues, in the sequela of hormone isolation and purification. It has shown, on the other hand, that a large quantity of extracts and opotherapic products, which are prepared regularly for commercial purposes, are completely inactive. Biological control has permitted in some cases to obtain standardization, thus establishing the smallest quantity which could produce a definite and measurable response in certain animals and under some specific conditions.

The specificity of a reaction must be considered as provisional, inasmuch as another product or definite substance, altogether different from the first, may determine a similar action. This happens, for instance, in the horn-shape reaction of the rodent's vaginal epithelium, which is induced not only by folliculin, but also by testicular extracts (Lowe, Lange and Spohr) by filtrates of bacterial cultures (Silberstein, Molnar and Engel), by a lipoid isolated from the Koch bacillus (Padersen-

* Department of Pharmacology, Faculty of Medicine, National University of Mexico, Mexico, D. F.

Bjergaard), by Clupanadoic acid (Coke), by Yohimbin, etc. . ., all these substances being, of course, different from Teelin.

At any rate, biological control is an indispensable guide for the investigation and isolation of active products of the endocrine glands, and we owe to it the finding of the male sexual hormone in an available form.

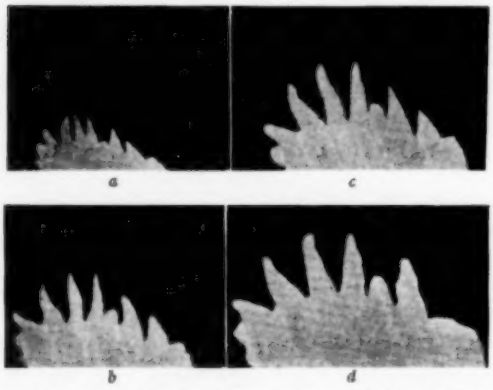

Fig. 1.—(*a*) Before treatment. (*b*) After third application. (*c*) Thirteen days after discontinuing the treatment. (*d*) Fifty-seven days after discontinuing treatment. Daily applications were made during five days.

Many tests have been proposed for the identification of male hormone; the reappearance of the "embrace" reflex in male castrated frogs (McCartney); appearance of the nuptial dress of certain fishes, chiefly the *Rhodeus Amorus*, whether castrated (Glasser and Hämpel) or not (Wunder), or their greater motility (Stanley and Tescher).

Other numerous tests are based on inducing the development of certain organs of the genital apparatus of male rodents before puberty or castrated: the development of the penis in the castrated rabbit (Loewe and Voss); anatomic or functional recuperation of the rat's prostate (Gallagher and Moore); of the Cowper glands (Heller); of the preputials (Loewe and Voss), etc. As a control, the inhibitory action of the female's heat (Lendle, Ihrke and d'Amour) and even alleged actions on metabolism (Loewe, Pichter and Peritz) have been tried.

In this paper we shall concern ourselves only with the test of McGee and his coworkers (1) consisting of the reaction on the bird's comb.

Pézard (2) showed that the regressive comb of the capon takes back its regular size with the testicular graft. McGee and his collaborators proved that the injection of adequately prepared testicular extracts produces a growth in the comb of the brown Leghorn capon. Moore, Gallagher and Koch (3) pointed out that the doses used produce a maximum development of the crest of many birds, thus invalidating the observations for the quantitative determination of the hormone. Later, Gallagher and Koch (4) reported the results of their investigations, using for the purpose brown Leghorn capons, prepared by Dr. Domm. They conclude that there are marked individual differences in the intensity of the response to the action of testicular hormone, and neither age, nor body weight, nor the initial size of the comb, are decisive factors of differentiation. However, they establish a standardization method which defines the cock unit as the lowest hormone quantity which if injected daily during five days, produces a 5 mm. growth in length and height.

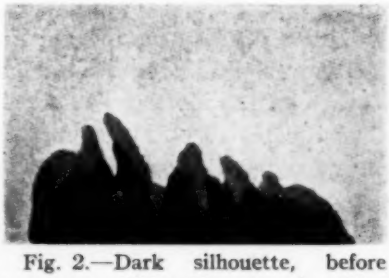

Fig. 2.—Dark silhouette, before treatment. Light silhouette, after third brushing.

Moore and Gallagher (5) in a paper in which they briefly criticize the control method of testicular hormone, compare the results of these methods in mammals with the result on the capon's crest, and conclude that six cock units equal one rat unit, this being the quantity needed to maintain in normal state, male castrated rats, with daily injections, during 20 days. Laqueur, instead of bearing in mind the absolute growth of the capon's crest, considers only the relative increase of the surface, taking as unit the daily minimum dose which determines in, at least, 2 or 3 capons (brown leghorn) a 15% surface increase. Rudolf Fussgaenger (6) observed that although the capon's crest increase depends on the quantity of hormone used, it does not correspond to a lineal function. In some cases the crest continued to grow after stopping the injections. Another interesting fact shown by Fussgaenger is that the masculine hormone is absorbed by the percutaneus route, its maximum activity being when it is applied with a brush on the very crest. In order to have an equal percentage of growth in the growth in the capon's crest, the following quantities would be needed, taking one as a unit for the amount used on the crest with the brush: 2.5 if the quantity is injected at the root of the crest, 50 if injected intramuscularly and 175 if applied with the brush on the skin of the back.

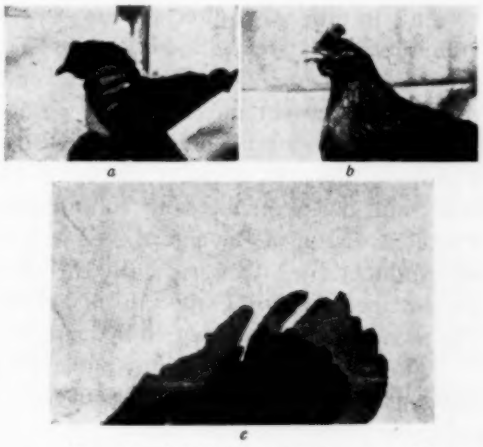

Fig. 3.—(*a*) Before treatment. (*b*) After treatment. (*c*) Dark silhouette, before treatment. Light silhouette, after the fifteenth brushing.

The castrating of birds has shown, from the first works of Pézard and Caridroit (7), that the development of the cock's crest depends on the testicular hormone action which has no influence on feathers inasmuch as the latter shows no change through castration. On the other hand, the ovarian hormone of hens has no action on the crest, but modifies the male's feathers as can be shown by grafting ovaries in the capon, which in this case, acquires a hen's plumage. The capon's feathers which are otherwise identical to those of a normal cock, become feminine in appearance through the ovarian graft; on the other hand, the crest is not modified, although it develops ostensibly in the castrated hen when testicles are grafted.

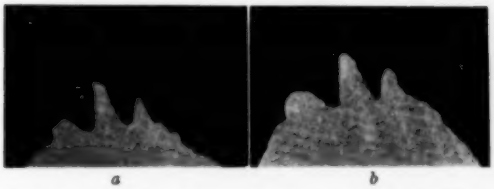

Fig. 4.—(*a*) Before treatment. (*b*) After twenty-three brushings.

From these experiments the conclusion is reached that the hen's crest is physiologically disconnected from the hormonal influence of the ovary. The feather changes show, as Champy and Demay (8) have pointed out, that there is no parallelism between the calonic action of the testicular hormone and the one exerted

by estrin. If the interpretation is correct the ovary would not interfere with the action of the testicular hormone, as far as its influence on the crest's growth.

In order to confirm this conclusion, we used a testicular extract the activity of which was tested by means of the prostatic and vesicular action in the castrated male rat. We used ordinary adult hens which have no spontaneous growth of the comb. In order to appreciate the growth of the comb under the influence of masculine hormone, we availed ourselves of the picture of the comb's shadow, placing same between a photographic plate and a glass, as advised by Fréméry. The planimetric measurement is easily obtained by placing on the picture of the silhouette a transparent millimetric counting device; this is obtained by printing on a positive film, the negative picture of the micrometric device of arbitrary dimensions, and just reducing same to millimetric scale by focusing on the glazed glass. The comparison of the combs, before and after the brush application of hormone was obtained by cutting carefully the silhouettes of direct impression and removing the cuttings to photographic paper, giving less exposure to the largest silhouette. The procedure is greatly eased by using castman proof paper.

The results confirmed fully our hypothesis: the comb of the normal adult hen, responds with greater activity than the crest of capons to the action of testicular hormone, plainly because that organ is not in the hen, in process of regression. In one of our observations (Fig. 1) the crest continued to grow after the application of the extract was discontinued and the hen's behavior changed in such a way as to assume masculine attitudes. We shall not interpret this result until after finishing the histological study of the gonadian right outline.

We take from our protocols four observations, the description of which is contained in the notes below the figures which illustrate this paper.

We believe that the hen method, on account of its simplicity, sensibility an application to ordinary breeds, can substitute to advantage the use of Leghorn capon, using as control a lot of adult hens and a previously standardized hormone.

CONCLUSIONS.

1. The normal adult hen's comb develops intensely with the action of testicular hormone.

2. Due to its simplicity and sensibility the hen can be used to substitute the test on the Leghorn capon, especially if application is made with a brush on the very comb. 3. The quantitative appreciation of the effect is afforded by the planimetric measurement of the comb's silhouette obtained by direct application of photographic paper.

The quantitative estimate can be obtained by comparison with a previously standardized hormone, using normal adult hens.

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THE MICROSCOPY OF POWDERED, DESICCATED THYROID AND SUPRARENAL.*

BY HEBER W. YOUNGKEN.[1]

The steady increase in the employment of powdered desiccated endocrine glands within recent years in the treatment of diseases resulting from a deficiency in or an unbalanced condition of the internal secretions has resulted in a greatly increased production of these products and the consequent need of biological and microscopical methods of valuation for them.

It has become evident that biological assays alone would not entirely satisfy the purity nor the identity standards of these materials and that without microscopic descriptions of them, they would be prone to adulteration with undesirable organic cellular materials by unscrupulous persons.

In December 1933, the author published the results of some preliminary studies made upon the microscopy of a number of these glandular products. Since that time additional desiccated endocrine glands and their powders have been studied by the writer. It is the purpose of this paper to outline the results of these studies upon powdered desiccated suprarenal and powdered desiccated thyroid glands.

MATERIALS AND METHODS.

The glandular products examined consisted of preserved and desiccated suprarenal and thyroid glands of cattle and hogs, powdered desiccated suprarenal glands of cattle and hogs, and the powdered, desiccated thyroid glands of cattle, sheep and hogs. Some of the glands were imbedded in celloidin, stained with Delafield's hematoxylin and studied under the compound microscope in comparison with figures and descriptions in recognized texts on animal histology for the purpose of establishing the relationship of regions and tissues.

The desiccated glands were macerated in water and these and the preserved glands were then dissected and representative regions teased apart and examined under the microscope separately in water and in other temporary mounts with various reagents and stains. The histological elements observed in them were compared with similarly stained and mounted materials of the powdered desiccated glands.

The reagents and stains employed were the following: Delafield's hematoxylin, Mallory's stain, equal parts of Mallory's stain and 1% phosphotungstic acid solution, chromic acid T.S., hematoxylin and eosin, alcoholic eosin and water.

It was found necessary to dilute the hematoxylin stains with water, especially when the fragments were large, in order to make out the cellular regions clearly. It was also found good practice to mount small portions of the powders, distributing their fragments as uniformly as possible in the mounting medium beneath the cover slip. Alike with these and other powdered endocrine products previously discussed, it is frequently necessary to examine a number of mounts to find the less numerous histological elements of the gland. This is owing to the finely comminuted and altered state of some of the histological elements.

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* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] Massachusetts College of Pharmacy, Boston, June 1, 1935.

THE THYROID GLAND.

The thyroid body is a ductless, compound tubular gland, and consists of two large almond-shaped lateral lobes united by a narrow bank, the middle lobe, or isthmus and forming a projection on the ventral surface of the trachea.

This gland is surrounded by a capsule of dense white fibrous tissue that sends in trabeculæ, which divide the gland into lobes and lobules. These divisions are irregular, and the lobules are composed of a number of short tubules, sometimes called follicles, that vary considerably in diameter. Each tubule is lined by cuboidal epithelial cells that rest upon a basement membrane; outside of this is the intralobular, or intertubular, connective tissue that supports the blood vessels. The cells are of two kinds, namely, the chief cells and the colloid cells. The chief cells are said to become the colloid cells, and these in turn change into the colloid substance that is supposedly the result of the activity of the cells. It has a yellowish color,

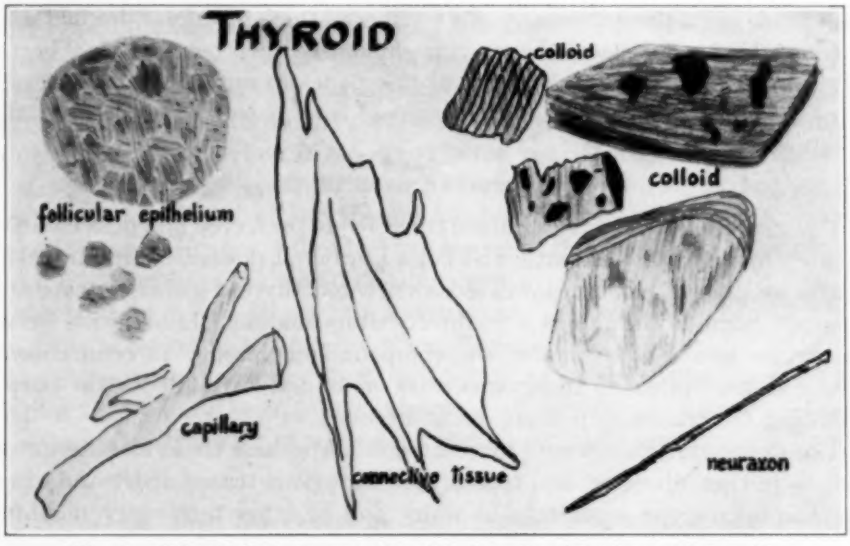

Fig. 1.—Histological elements found in Powdered Desiccated Thyroid.

and as blood cells are frequently seen in it, the color may be due to the hemaglobin from these. Sometimes the colloid material is shrunken, and then its edges are crenated; in such tubules, the epithelial cells are drawn away from the basement membrane. Blood vessels are numerous, and dense plexuses are formed around the tubules. It is thought that the colloid substance may represent an internal secretion that is absorbed by the blood vessels, or perhaps by lymphatics. The lymphatics are numerous, and lie between the tubules. They often contain some of the colloid substance.

The lobes of the thyroid are separately removed from the recently slain animal deprived of enveloping connective tissue and fat, sliced or minced and rapidly dried in a current of warm air. They are then reduced to a coarse powder which is treated with petroleum ether for the partial removal of fatty matter present. The powder is then dried in a desiccator. The final product should be a yellowish or buff-colored amorphous powder having a slight, characteristic, meat-like odor and saline taste.

POWDERED DESICCATED THYROID.

When suitably mounted and examined under the microscope, it shows numerous smooth to striated, hyaline fragments of colloid, of angular to irregular shape which are colorless to pale yellow in water mounts, brown in Mallory's stain and pink in eosin solution, some of these fragments containing granules, minute vacuoles, crystalloidal bodies and cells; numerous irregular fragments of follicular epithelium staining brown or orange-brown with Mallory's stain, the individual cells more or less polygonal to rounded-angular or irregularly cuboidal, often with prominent nuclei staining dark blue, their cytoplasm purplish with Delafield's hematoxylin; slender glistening segments of neuraxons; numerous aggregates of particles of intercellular substance and slender, mostly straight, connective tissue fibres staining blue to greenish blue with a mixture of Mallory's stain and 1 per cent solution of phosphotungstic acid, the bundles of fibres often appearing reddish in plain Mallory's stain; few glistening fragments of blood vessels with serrated or crenated ends as viewed in water mounts.

THE SUPRARENAL GLANDS.

The suprarenal or adrenal glands are more or less pyramidal shaped ductless glands, one being situated on the upper pole of each of the kidneys. Each gland

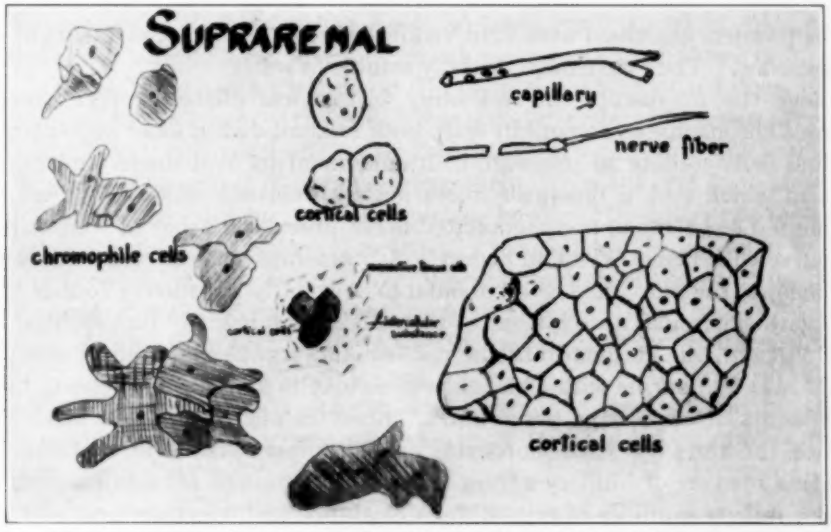

Fig. 2.—Histological elements found in Powdered Desiccated Suprarenal.

is surrounded by a thin capsule of white fibrous connective tissue and presents for examination two regions, the cortex and the medulla.

The cortex or outer firmer region is yellowish in appearance and when examined microscopically consists of a delicate framework of connective tissue in the meshes of which lie solid columns of epithelial cells. It is subdivided into three zones known in order from without inward as the zona glomerulosa, the zona fasciculata and the zona reticularis. The cells of the zona glomerulosa are mostly large and polyhedral and contain many lipoid granules. In cross sections they appear in irregularly circular to oval groups. The columns of cells are surrounded by a reticu-

lum of connective tissue containing capillaries and nerve fibres. The zona fasciculata consists also of epithelial columns arranged in radial groups which are surrounded by connective tissue containing capillaries and nerve fibres. The epithelial cells of this zone appeared to be larger than those of the other cortical zones and contained lipoid granules. The zona reticularis is composed of a network of small polyhedral epithelial cells with large nuclei and pigmented cytoplasm. It is the darkest tinted of the three zones of the cortex.

The medulla comprises the central portion of the gland. It is soft in texture and brown in color. It consists of numerous polygonal to somewhat lobed and stellate, chromophil or chromaffin cells arranged in irregular groups and anastomosing cords that are surrounded by connective tissue containing blood vessels, blood sinuses, capillaries, nerve fibres and ganglion cells. The chromaffin cells contain material which stains brown with solutions of chromic acid or its salts.

In the preparation of the powdered desiccated drug, the glands are obtained from freshly killed cattle, sheep and hogs, deprived of surrounding connective tissue and fat, sliced or minced and rapidly dried in a current of warm air. They are then reduced to a coarse powder, in some places partially defatted, and dried *in vacuo* at a temperature below 60° C. or by means of a dehydration solvent like acetone.

POWDERED DESICCATED SUPRARENAL.

The powders examined were light yellow to brown and possessed a slight characteristic odor. They were only partially soluble in water.

Under the microscope the following histological elements were observed: Numerous chromaffin (chromophil) cells, both isolated and in loose aggregates, the individual cells stellate to irregular with spheroidal to oval nuclei and granular cytoplasm which took a brownish coloration with chromic acid T.S.; numerous clear, jointed segments of non-medullated nerve fibres, the axons of which are colored mauve with hematoxylin and eosin T.S., numerous cortical cells both isolated and in masses, the individual cells cuboidal to irregularly rounded or rounded polyhedral, with spheroidal nuclei, some of the cells containing tiny fat globules, granules or pigment, the chromatin of the nucleus and granules staining blue and the protoplasm red to purple with Delafield's hematoxylin and alcoholic eosin; numerous fragments of connective tissue fibres, fibrocytes and particles of intercellular substance, the fibres wavy, the fibrocytes slender, linear to fusiform, and all colored blue with a mixture of Mallory's stain and a 1% solution of phosphotungstic acid, numerous minute granules of crystalline appearance and irregular form and many isolated nuclei.

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George Washington University School of Medicine has announced the addition to the faculty of the newly established course in public health teaching of Drs. George W. McCoy, Rolla E. Dyer, Edward Francis, Charles Armstrong and Robert Olesen, all of the U. S. Public Health Service, with the title of professorial lecturer in preventive medicine. The appointment of Ralph W. Harris, Ph.D., as assistant professor of anatomy at the school of medicine, was also announced.

THE CONSTITUENTS IN CASCARA SAGRADA EXTRACT. 2. A METHOD OF BIOASSAY.*,[1]

BY MELVIN W. GREEN, C. G. KING AND GEORGE D. BEAL.[2]

Cascara sagrada, the dried bark of the trunk and branches of *Rhamnus Purshiana* (De Candolle), has been studied in many laboratories with the hope of disclosing the chemical nature of its active ingredients. Due to the predominance of methyl anthraquinones, the bark extracts have been classified as anthracene, anthraquinone or emodin cathartics. Jowett (1) has identified emodin and isoemodin (trihydroxymethyl anthraquinones) as free aglycones, in addition to rhamnol, a sterol melting at 135–136°, syringic acid, pyrocatechuic acid, and several common fatty acids. Beal and Tumminkatti (2), Daels (3) and others have shown that the anthraquinones present may be either free or combined. Sipple, King and Beal (4) have reported the isolation of a rhamnoside yielding emodin and rhamnose upon hydrolysis. No definite quantitative correlation has been established between any chemical unit and cathartic activity, however.

There have been many attempts to assay cathartics physiologically, but no method has come into general use. White mice, dogs, cats and men have been used for this purpose, according to Munch (5), the results being expressed in terms of the minimum dosage required to produce catharsis. Sipple, King and Beal (4) found their rhamnoside to be inactive when administered orally to white mice in doses equivalent to 3 Gm. of bark, and pure emodin was inactive in doses of 5, 10 and 20 mg. Gruber, Bryan and Richardson (6), using non-anesthetized dogs, placed a rubber balloon in the lumen of the gut and recorded the effect of various drugs upon the general tonus and contractions of the intestine. Meissner (7) and several others have tried the effect of various drugs, including senna and frangula, on isolated portions of the intestine. In our opinion, however, the latter two methods do not express the total physiological activity, because they do not take into consideration such phenomena as swelling, hydration and absorption, or the effect of irritation and stimulation in different areas of the intestinal tract. Munch (5) apparently obtained the best results with cats, but claimed an accuracy of only 20 to 50%.

This study was undertaken to establish a means of assay sufficiently accurate that we might obtain further information regarding the value of various fractions of cascara sagrada extract.

EXPERIMENTAL.

1. CHEMICAL FRACTIONATION.

A method for the fractionation of the bark extract similar to that of Sipple, King and Beal (4) was employed; 300 Gm. of bark was extracted with ethyl acetate, yielding a water- and alcohol-insoluble, highly colored, resinous mass which was designated as Fraction A. The marc was then divided into two portions, B and C. Portion B was first extracted with alcohol yielding fraction B_1 and its marc further extracted with acetone yielding B_2. In the case of portion C, the

* The authors are indebted to the Parke, Davis and Company for a research grant (for M. W. G.) and for supplying the cascara bark.

[1] Contribution No. 307 from the Department of Chemistry, University of Pittsburgh.

[2] Assistant Director, Mellon Institute of Industrial Research.

procedure was reversed, *i. e.*, it was first extracted with acetone yielding C_1 and the marc later extracted with alcohol yielding C_2. These B and C extractives were again divided into subfractions based upon lead acetate precipitations and solubility in organic solvents without identification of individual ingredients.

2. ANIMAL ASSAY.

Assay of Fluidextract.—An attempt was made to use both guinea pigs and white rats to measure the degree of catharsis. The animals, kept in individual cages, were fed a Sherman, La Mer and Campbell (8) diet *ad libitum*, supplemented, in the case of guinea pigs, with orange juice or spinach for vitamin C. Twenty-four hours before the beginning of the test period, they were transferred to raised-bottom cages adapted for the collection of feces. The guinea pigs weighed from 300 to 500 Gm. Above this they were too irregular in response for satisfactory use.

The degree of catharsis was determined by the rate of fecal output (Gm. per hour), the feces being collected and weighed every three hours. In order to detect any abnormal rate in the fecal output before the beginning of the assay period, the animals were kept under observation for at least 6 hours before the cascara was given and then adjusted into groups as nearly balanced

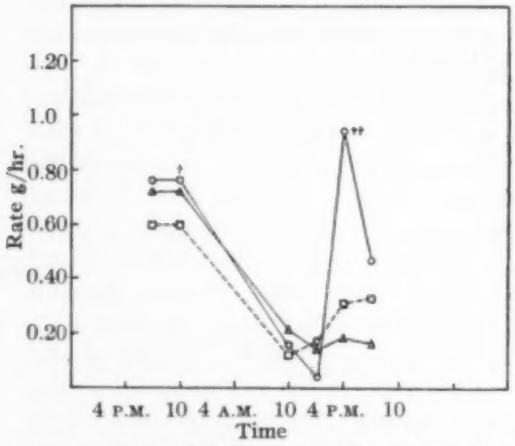

Fig. 1.—Assay of fluidextract with guinea pigs using single dosage.

○——2.0 Gm. dosage
△——1.0 Gm. dosage
□-----control
+——cascara given
++——liquefaction

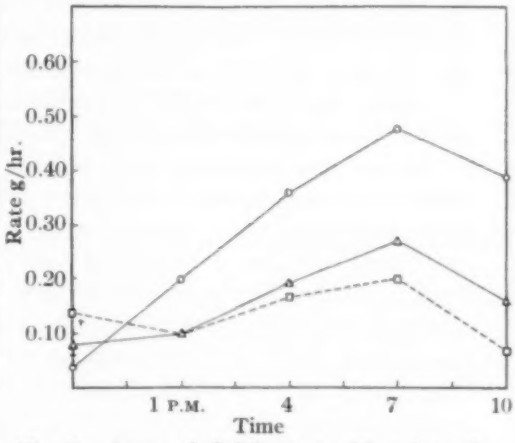

Fig. 2.—Assay of fluidextract with guinea pigs using two separate doses.

○——total of 1.0 Gm. dosage
△——total of 0.5 Gm. dosage
□-----control
+——2nd dose of cascara given

as possible. When the test proper was begun, food cups were removed to avoid the influence of differences of food intake. The cascara was administered by pipette in the form of fluidextract U. S. P. X in doses of 1 and 2 cc., equivalent to 1 and 2 Gm. of original bark. Control animals were given 2 cc. of water by pipette, thus eliminating any difference due to handling of the animals. A period of at least one week was allowed between experiments to permit the animals to readjust themselves to normal.

For about twelve hours after the cascara was given, during which there was no food intake, there was a very slow fecal output, clearly subnormal, followed by an increase and occasionally a degree of liquefaction which continued through 18 or 21 hours after the time of dosage. Below is a typical curve (Fig. 1) showing the effect of the fluidextract on a group of 15 guinea pigs (5 on each level). In many cases liquefaction occurred when there was not such a steep rise in the curve as indicated by the highest point for the 2-Gm. group.

Figure 2 shows an average effect on guinea pigs taken from four independent determinations. The animals were given doses equivalent to 0.5 or 1.0 Gm. of bark in divided doses. The first dose was given at 10 P.M. and the second at 10 A.M. the following day (each dosage level represents 16 animals).

The response of the white rat was not so uniform as that of the guinea pig when the same procedure was employed. The fluidextract was fed in doses equivalent to 50 and 100 mg. of bark.

A preliminary observation of 24 hours preceded the actual test period. After the administration of cascara, the animals were observed during an assay period of 24 hours. During the pretest period, the rate-fluctuation was similar to that of the control group during the assay. An average rate of 0.06 Gm. per hour was followed by a maximum of 0.32 Gm. per hour on the higher level. This curve (Fig. 3), with five animals on each level, is the best one we have obtained with rats. For the most part, the rat assays were less satisfactory than was indicated by this curve.

In the case recorded in Fig. 2, the average total fecal output during the active period of catharsis (4 P.M. to 10 P.M.) was determined and compared with the total output for each animal. The probable errors were calculated from this information (Table I). The probable error of the difference between the means of the high and low dosage level was found to be 0.15, while the difference between these means was 0.61. If this difference between the means had been the same as the probable error of the difference, then the chances would have been even that the difference in the rate of fecal output on the two levels was a real one. But, since the ratio of the difference between the means to the probable error of difference is approximately 4 to 1, the chances are about 142 to 1 that this difference is real. The ratio of the difference between the means of the low level and controls to the probable error of this difference is 1.4 which means that the chances for this difference being real is slightly less than 4 to 1.

TABLE I.—DEGREE OF VARIATION IN BIOLOGICAL ASSAY.

Test Level (Fig. 2).	Total Wt. of Feces Gm. (4 P.M.–10 P.M.).	Probable Error.
High dosage level (1.0 Gm.)	1.16	0.14
Low dosage level (0.5 Gm.)	0.55	0.06
Control	0.41	0.08

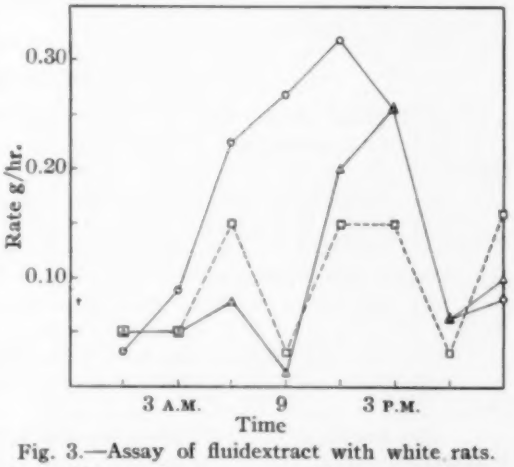

Fig. 3.—Assay of fluidextract with white rats.
○——100 mg. dosage □------control
△——50 mg. dosage +——cascara given

Assay of Fractions.—Typical fractions from the above scheme of separation were assayed by the method just described. Liquefaction did not occur so regularly as with the whole-bark extract, nor was the fecal output increased by an equivalent dosage of the various fractions. In doses equivalent to 2 Gm. of bark, the products corresponding to B_1 and C_1 were both active, but less so than the fluidextract. The water-insoluble fraction A was also active, but less so than either water-soluble B_1 or the fluidextract.

DISCUSSION.

Although the method of assay is not sharply quantitative, it is sufficiently accurate with guinea pigs to interpret the results of feeding various fractions of the bark or pure compounds. An average result from several different determinations gives a relatively smooth curve. With the present technique, the white rat is too undependable, however, for this type of assay.

On the basis of the work done so far on the feeding of fractions, it appears that no one fraction is responsible for the full activity characteristic of the whole-bark extracts. This may be due in part to a solubility effect, as suggested by Poulsson (9), but we are inclined to think that the effect is due to the combined influence of the many substances present. Although it is generally conceded that cascara

acts chiefly on the colon, there is probably some influence on the small gut; so that the total activity is due to the synergetic effect of the various constituents acting all along the tract. It was noticed, in the case of the water-insoluble fraction A, that the higher doses (2–10 Gm. equivalents) caused the urine to be colored a deep reddish yellow, characteristic of the anthraquinones. Apparently a large part of the originally insoluble material entered the circulation and was rapidly excreted by the kidneys.

SUMMARY.

(1) A method of making physiological assays of the cathartic value of cascara sagrada has been described, based upon the use of young, growing guinea pigs as experimental animals.

(2) The study of various fractions prepared from cascara sagrada, based primarily upon differences in solubility in water, alcohol, ethyl acetate and acetone, indicates that the activity is widely distributed between the various fractions and probably is dependent upon several types of substances. Hence, specific chemical tests and irritability tests on isolated muscle are likely to be misleading in terms of cathartic value.

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DRUG EXTRACTION. VII. THE EFFECT OF METHOD OF PACKING ON EFFICIENCY OF PERCOLATION.*[1]

BY WILLIAM J. HUSA[2] AND C. L. HUYCK.

In packing drugs in percolators, the choice of a method is governed largely by the scale of operations. In packing a 1000- or 5000-gallon percolator the weight of the drug is usually depended upon to produce as much packing as is needed. In packing a quart or half-gallon percolator the most generally used method has been to transfer all of the moistened drug to the percolator and apply pressure to the top by means of an ordinary wooden potato masher or a large cork fitted with a handle, thus securing greater packing in the upper portion of the drug.

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* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] This investigation was aided by a grant from the AMERICAN PHARMACEUTICAL ASSOCIATION Research Fund. [2] Head Professor of Pharmacy, University of Florida.

An experiment was carried out to determine what effect a difference in method of packing would have on the efficiency of percolation, since no data on this point could be found in the literature.

EXPERIMENTAL PART.

An experiment was carried out in which two methods of packing were compared under two different conditions of percolation, *i. e.*, (*a*) slow percolation with maceration both before and after packing, and (*b*) fast percolation with no maceration whatever. In the method of packing designated as "from top," the moistened drug was introduced into the percolator in small portions with slight agitation of the percolator to promote even distribution, and after all the drug had been thus introduced it was packed down from the top, using a wooden potato masher and starting with light pressure which was gradually increased. In the method of packing designated as "in sections," the drug was introduced in about eight portions and each separate portion packed down. As indicated in Table I, the method of packing in sections gave tighter packing as evidenced by the smaller volume of the packed drug.

The drug used was belladonna root in No. 40 powder. The menstruum was a mixture of 5 volumes of alcohol and 1 volume of water.

Four portions of drug of 800 Gm. each were percolated, each portion being moistened with 480 cc. of menstruum. The following percolates were collected from each percolator: reserve I, 320 cc.; reserve II, 320 cc.; weak percolate, 320 cc. The sum of reserves I and II corresponds to 800 cc. of reserve percolate for 1000 Gm. of drug. The reserve portion was collected in two fractions in order to throw more light on the course of the extraction.

TABLE I.—EXPERIMENTAL DETAILS.

Percolator.	Method of Packing.	Hours of Maceration. Before Packing.	Hours of Maceration. After Packing.	Rate of Flow in Drops per Minute. Reserves I and II.	Rate of Flow in Drops per Minute. Weak Percolate.	Volume of Packed Drug in Cc.
I	In sections	6	48	10	20	1490
II	From top	6	48	10	20	1750
III	In sections	0	0	20	40	1500
IV	From top	0	0	20	40	1725

TABLE II.—ASSAY RESULTS.

	Gm. Total Alkaloids. Percolator I.	Percolator II.	Percolator III.	Percolator IV.	Gm. Total Extractive. Percolator I.	Percolator II.	Percolator III.	Percolator IV.
Reserve I	1.67	1.80	1.75	1.71	26.9	26.4	26.3	25.5
Reserve II	1.79	1.81	1.37	1.60	24.5	25.2	24.0	24.3
Weak percolate	0.31	0.16	0.42	0.24	19.2	19.7	19.9	20.6
Total	3.77	3.77	3.54	3.55	70.6	71.3	70.2	70.4

The effect of packing may be seen by the comparison given in Table III.

TABLE III. ASSAY RESULTS IN RESERVE PORTION.

	Gm. Total Alkaloids in Reserves I and II as a Whole. Packed in Sections.	Packed from Top.
Slow percolation	3.46	3.61
Fast percolation	3.12	3.55

DISCUSSION OF RESULTS.

The results thus far obtained indicate that packing from the top is somewhat better than packing in sections. When the drug is packed from the top more of the alkaloid is in the reserve and less in the weak percolate than when packed in sections. As far as present results are concerned, the method of packing has no appreciable effect on the rate of extraction of total extractive.

When maceration both before and after packing was omitted and the rate of flow doubled, the extraction of alkaloids was slower but there was no appreciable effect on the efficiency of extraction of total extractive.

SUMMARY.

By percolation experiments using 800-Gm. portions of belladonna root it has been found that extraction of alkaloids is more efficient when all the drug is placed in the percolator and packed from the top than when the drug is introduced in the percolator in portions and each portion packed before the next is added. The method of packing has no appreciable effect on the efficiency of extraction of total extractive. When maceration before and after packing is omitted and the rate of percolation is doubled the extraction of alkaloids is slower but there is no appreciable effect on the efficiency of extraction of total extractive.

SOME MERCURIATED DERIVATIVES OF THYMOL AND CARVACROL.*

BY JOSEPH B. BURT.[1]

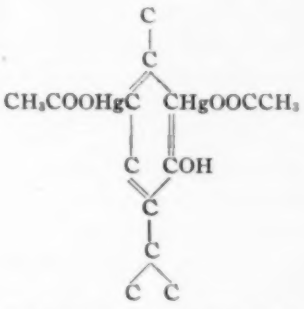
According to the anonymous author (1) of a paper on mercury compounds of the aromatic series, a number of such derivatives of mercury have been suggested for use as antisyphilitics. Among others, "Thymol Mercury" was suggested by Bambelon in 1888. This preparation was described as a basic salt having a violet-green color, which was regarded as unsuitable for therapeutic use because of its lack of stability. The author also mentions a series of thymol mercury derivatives of a different type prepared by E. Merck, which were thought to be double salts containing an organic or inorganic acid radical as a constituent of the molecule. Three examples of such compounds are listed by Merck (2), *viz.*, mercuric thymol acetate, mercuric thymol nitrate and mercuric thymol sulphate. The only one of these for which a definite formula is given is thymol mercuric acetate, which is shown as $Hg(CH_3COO)_2$-$Hg(CH_3COO$-$C_{10}H_{13}O)$. In addition, Merck also lists mercuric thymol salicylate as well as mercury thymolate, probably the same as the "Thymol Mercury" previously mentioned. The latter is described as a "basic salt of variable composition, but usually $HgC_{10}H_{13}OH$" (sic), "a reddish yellow powder, insoluble in water."

Another reference to mercury derivatives of thymol is the report of Dimroth (3) on the formation of chlormercuri thymol, $C_6H_2(CH_3)$-$(C_3H_7)OH$-HgCl, and di-acetoxymercuri thymol, $C_6H(CH_3)(C_3H_7)OH$-$(HgOCOCH_3)_2$. The author does not indicate the positions of the substituted groups, but the formulas indicate that he

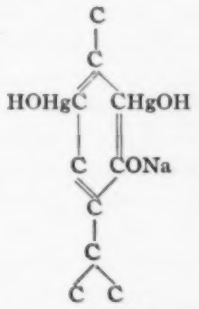
* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] College of Pharmacy, University of Nebraska.

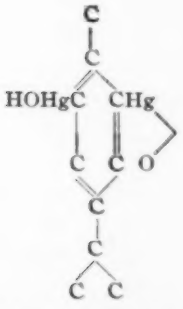
considers the hydrogens of the nucleus replaced, rather than the phenol hydrogen. Whitmore (4), in his review of Dimroth's report, suggests that the first compound may be considered as the para derivative, for he assigns to it the name (p. 112)-chlormercuri thymol. He calls the second compound diacetoxymercuri thymol, without suggesting the possible positions of the substituted groups.



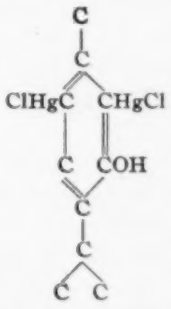
2,6-Diacetoxymercuri thymol.
Thymolquecksilberacetat. (Rupp.)



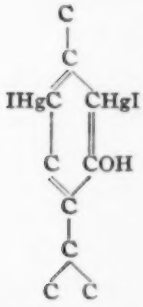
Sodium 2,6-dihydroxymercuri thymolate.
Dimercurihydroxy-Thymolnatrium. (Rupp.)



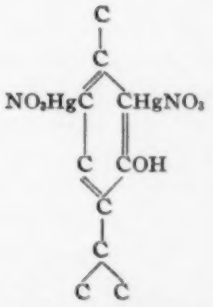
Mono-anhydride of 2,6-dihydroxymercuri thymol.
Monoanhydridodimercurihydroxy-Thymol. (Rupp.)



2,6-dichlormercuri thymol.
Dimercurichlorid-Thymol. (Rupp.)



2,6-diiodomercuri thymol.
Dimercurijodid-Thymol. (Rupp.)



2,6-dinitratemercuri thymol.
Dimercurinitrat-Thymol. (Rupp.)

A more comprehensive study of the mercury derivatives of thymol is that of Rupp (5), a publication that appears to have been omitted in Whitmore's compilation. Rupp confined his study to the di-mercuric derivatives of thymol, and reported the preparation of six compounds, the compositions of which were determined by analysis, and he also established the position of the substituted hydrogens as 2, 6. The compounds which he obtained are shown on page 113.

Rupp's results are not in accord with the earlier view that the diacetoxymercuri thymol could be obtained in the form of the sodium thymolate by dissolving in sodium hydroxide solution and crystallizing from this solution, for they indicate that the product resulting from this treatment is the sodium dihydroxymercuri thymolate instead of the sodium diacetoxymercuri thymolate. He also points out the fact that these compounds, by dissolving in solutions of fixed alkalies, preclude the possibility of a double salt containing one molecule of mercuric acetate associated with one molecule of the substituted thymol, as suggested by Merck, since in this case the alkali would precipitate mercuric oxide instead of forming a solution.

The fact that these compounds retain their phenolic character and at the same time contain a rather high percentage of mercury suggests that they may be of some importance as antiseptics and fungicides. In as much as carvacrol, the phenol isomeric with thymol, has recently been employed in the treatment of dermaphytosis, and no report of the application of the reaction of mercuric salts to carvacrol has been found in the literature, it seemed desirable to investigate this possibility. Accordingly, a study of these products has been undertaken, which is still in progress. This discussion represents but a preliminary report on a few derivatives of carvacrol which have been obtained thus far.

EXPERIMENTAL.

Mono-chlormercuri Carvacrol and Di-chlormercuri Carvacrol.—Thirty grams (30.72 cc., one mol.) of carvacrol, obtained from the volatile oil of *Monarda pectinata*, Nutt., were dissolved in alcohol and boiled, under a reflux condenser, with an alcoholic solution of 63.66 Gm. (one mol.) of mercuric acetate, to which 12 cc. of glacial acetic acid had been added, for about three hours. Upon cooling and standing a few hours, a bulky deposit of needle-shaped crystals was formed, apparently the acetoxymercuri carvacrol. This compound was not isolated, but the reaction mixture was again heated, whereupon the crystalline material dissolved, except for slight traces of flocculent material (not needle-shaped crystals) which were removed by filtering while hot. The solution was then poured with stirring into an aqueous saturated solution of sodium chloride, precipitating the chlormercuri carvacrol. This was filtered out with suction, washed with water and dried. The weight was 62.0 Gm., corresponding to a yield of 80.72 per cent of the theoretical, based upon the mono-derivative. The substance was found to be, however, a mixture of the mono- and the di-derivatives.

Thirty-six and one-half grams of the crude product were recrystallized from hot 50 per cent alcohol. After repeated extraction, a white residue remained, which was insoluble in the solvent, and which appeared to be much heavier than the main portion of the product. After drying, the insoluble portion weighed 3.95 Gm. After hydrolysis by boiling with dilute hydrochloric acid (yielding carvacrol and mercuric chloride), the mercury was determined by precipitation as sulphide. Two

samples gave 64.58 and 64.62 per cent, respectively, of mercury. The calculated percentage of mercury in di-chlormercuri carvacrol, $C_{10}H_{12}OHg_2Cl_2$, is 64.69 per cent. The compound decomposes with partial fusion at 207–208° C. It gives a positive test for halogens when heated on a copper wire. It is a fine powder, characterized by the tenacity with which it adheres to every surface with which it comes in contact, and appears to become electrified upon rubbing.

The hot 50 per cent alcoholic solution was allowed to cool, and the material which separated (18.2 Gm.) was filtered out. A second crop (8.75 Gm.) was obtained by partial spontaneous evaporation of the mother liquor.

The first crop (18.2 Gm.) was again recrystallized from hot 50 per cent alcohol, in which it was completely soluble. Two crops were obtained as before. These were combined and again recrystallized from the same solvent. Two crops (6.80 Gm. upon cooling, and 7.20 Gm. upon partial evaporation) were obtained. A sample of the first crop appeared to decompose without complete fusion at 163–164° C. When assayed for mercury after hydrolysis with dilute hydrochloric acid, by precipitation as sulphide, two samples gave 52.73 and 52.83 per cent, respectively, of mercury. The calculated value for monochlormercuri carvacrol is 52.08 per cent of mercury. Thus it appears that the product, after three recrystallizations from hot 50 per cent alcohol, is still contaminated with traces of the di-derivative.

The somewhat impure mono-chlormercuri carvacrol is very soluble in acetone, and in dioxan, from both of which it may be reprecipitated by pouring into water. It is difficultly soluble in alcohol, ether and chloroform, and practically insoluble in petroleum ether and water. A solution in acetone, another in dioxan and a suspension in water, all gave, upon continued treatment with hydrogen sulphide, precipitates of mercuric sulphide, but somewhat less promptly than if previously hydrolyzed. A saturated chloroformic solution, when boiled with solid sodium hydroxide, failed to give a Flueckiger test, indicating the absence of free carvacrol. The substance is finely crystalline, appearing under the microscope as long needles. The second crop formed larger needles, visible to the naked eye. When heated on a copper wire, a positive test for halogens is given. The compound dissolves readily in 5 per cent solution of sodium hydroxide, probably forming the sodium mono-hydroxymercuri carvacrolate. If the solution is acidified with dilute hydrochloric acid, the original mono-chlormercuri carvacrol is reprecipitated. If, however, the alkaline solution is treated with carbon dioxide, a bulky white precipitate is slowly formed, which is, without doubt, the mono-hydroxymercuri carvacrol. This product has not, as yet, been examined.

Mono-acetoxymercuri Carvacrol.—Equimolecular portions of carvacrol and mercuric acetate (30 Gm. carvacrol, 63.66 Gm. mercuric acetate) were boiled together in alcoholic solution containing 12 cc. of glacial acetic acid, under a reflux condenser, for three hours. The hot reaction mixture was filtered free from a trace of flocculent material which was formed, and, upon cooling, a mass of needle-shaped crystals was deposited. These were filtered out and additional crops were obtained from the alcoholic mother liquor by fractional crystallization. Four crops were obtained, weighing 31.5 Gm., 9.95 Gm., 8.50 Gm. and 10.10 Gm., or a total of 60.05 Gm., corresponding to a yield of 73.59 per cent of the theoretical, based upon the mono-derivative. Three samples of the first crop, without further purification,

gave, upon hydrolysis and precipitation as mercuric sulphide, 49.66, 49.75 and 49.76 per cent, respectively, of mercury. The calculated percentage of mercury for the mono-acetoxymercuri carvacrol is 49.08 per cent. It is evident that the first crop is somewhat impure, being contaminated with traces of the di-acetoxymercuri carvacrol. A sample of the first fraction partially fused and decomposed, rising out of the melting-point tube due to gas formation, at 173–174° C.

Mono-chlormercuri Thymol Methyl Ether.—The ease with which the mono-chlormercuri carvacrol and the mono-acetoxymercuri carvacrol dissolve in fixed alkali indicates that the phenol hydrogen is not involved in the reaction. Accordingly, the methyl ether of thymol or of carvacrol should react with mercuric acetate. This reaction was carried out on the methyl ether of thymol on a small scale, the product being precipitated by pouring the alcoholic solution into an aqueous solution of sodium chloride. A grayish white product, appearing almost white when dry, was obtained in a quantity corresponding to a yield of 90.87 per cent, based upon the mono-derivative. Although equimolecular proportions were used, it is probable that the product is a mixture of the mono- and di-derivatives, with the mono-derivative predominating. No attempt has been made to separate the compounds, nor has it been analyzed for mercury. It gives a positive test for halogens, and a precipitate of mercuric sulphide upon suspending in water and treating with hydrogen sulphide. It is fairly soluble in acetone and dioxan, somewhat less soluble in ether and glacial acetic acid, difficultly soluble in chloroform and alcohol and practically insoluble in petroleum ether. It is insoluble in a 5 per cent solution of sodium hydroxide, even upon boiling, but turns somewhat grayish under this treatment.

Mono-chlormercuri Carvacrol Methyl Ether.—In a procedure similar to that followed in the reaction with the methyl ether of thymol, the methyl ether of carvacrol yielded a product corresponding to 83.34 per cent of the theoretical, calculated for the mono-derivative. This product was also grayish white in appearance, being somewhat darker when moist. It also gave a positive test for halogens, and is acted upon, in aqueous suspension, by hydrogen sulphide to form mercuric sulphide. It has properties similar to those of the corresponding derivative of the methyl ether of thymol, except that it is relatively more soluble in glacial acetic acid, and notably less soluble in acetone. It is likewise insoluble in a 5 per cent solution of sodium hydroxide.

SUMMARY AND DISCUSSION.

A preliminary study, chiefly of the mono-mercuri derivatives of carvacrol, has been made. The following compounds have been prepared: mono-chlormercuri carvacrol, di-chlormercuri carvacrol, mono-acetoxymercuri carvacrol, mono-chlormercuri thymol methyl ether and mono-chlormercuri carvacrol methyl ether. The mono-derivatives of carvacrol dissolve readily in dilute alkalies to form the corresponding phenolates, which may be obtained by crystallization from the solution, or precipitated in the form of the mono-hydroxymercuri carvacrol by treatment of the alkaline solution with carbon dioxide. Although equimolecular proportions of carvacrol and mercuric acetate were used, the product of the reaction is a mixture of the mono- and di-derivative, in which the mono-derivative predominates.

Ten per cent ointments of the mono-chlormercuri carvacrol and of the mono-acetoxymercuri carvacrol have been prepared and submitted to Dr. R. L. McIntosh, of the State of Wisconsin General Hospital, who has kindly agreed to conduct a series of laboratory and clinical tests of their fungicidal properties.

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A TOXICOLOGICAL STUDY OF THE CUTANEOUS SECRETIONS OF THE SALAMANDER, *TRITURUS TOROSUS* (RATHKE).*

BY ERNST T. STUHR.[1]

INTRODUCTION.

Interest in the secretions and excretions of various animals has been long manifested. The literature records numerous references to the poisonous skin secretions of toads (1, 2, 3), reptile venoms (4), spider bites (5, 6), insect bites and stings. Noble (7) has indicated that the secretion of the skin glands of certain salamanders is potent, particularly the secretion from the granular glands, due to several alkaloidal-like principles, and that the virulence of the poison differs with the species of salamander.

The toxic properties of an aqueous solution of the granular gland secretions of the salamander is here considered.

The Glandular Secretions.

The western newt, *Triturus torosus* (Rathke), is a common species of salamander in the Oregon country. Profuse cutaneous excretion occurs during the breeding (mating) season, March–April. The glands can be stimulated by subjecting the animals to crowded quarters or by partial suffocation. The secretion may then be secured by washing the salamanders. The granular cell product is transparent, while the mucous cell product is turbid, possibly indicating partial oxidation and insolubility. The two secretions can be separated by decantation or by the use of a separatory funnel.

ACUTE TOXICITY.

Hypodermic injections (subcutaneously or intraperitoneally) caused animals (frogs, cats, rabbits, guinea-pigs and dogs) to rapidly develop toxic symptoms and

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* Scientific Section, A. Ph. A., Portland meeting, 1935.

[1] Department of Pharmacology and Pharmacognosy, School of Pharmacy, Oregon State College, Corvallis.

effects of general depression, muscular incoördination, respiratory irregularities, followed by death due to respiratory failure, with the heart continuing to beat for several minutes after respiratory paralysis. The higher animals developed nausea and vomiting, indicating medullary disturbances.

GENERAL PHYSIOLOGICAL CONSIDERATION.

Local Action:

Subjective: Benumbing sensation to the hands and skin contacted; indicating paralysis of the sensory nerve endings.

On frog: A normal frog was immersed and allowed to rest in a bath of the aqueous solution of the salamander secretion. The frog became sluggish in responding to ordinary stimuli; the secretion solution apparently acting as a local anesthetic.

Circulatory and Respiratory Response:

On frog:

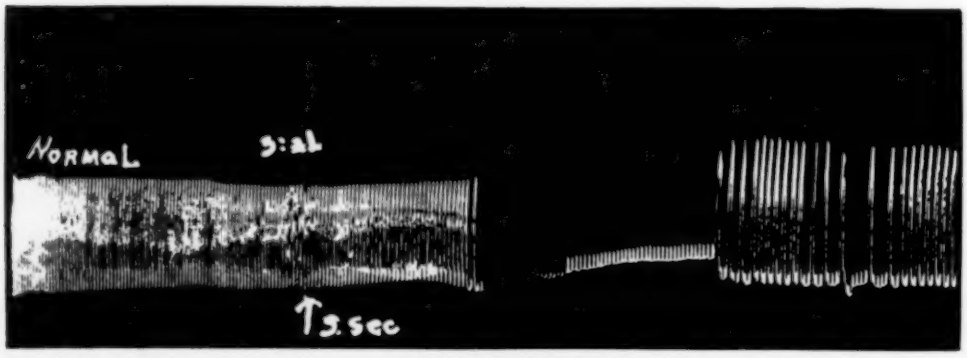

Fig. 1.

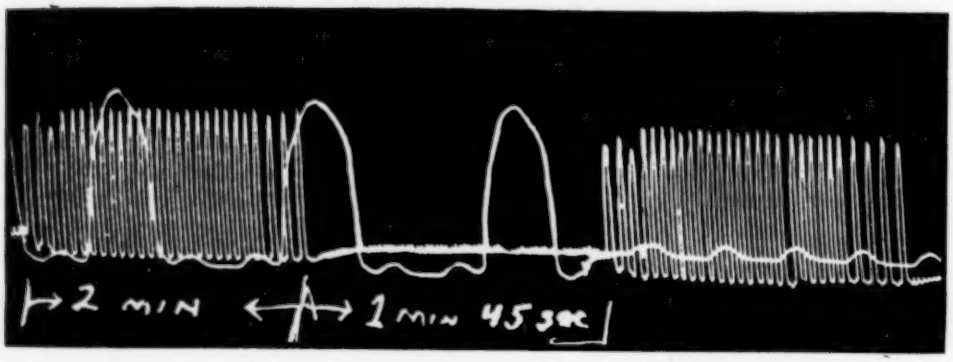

Fig. 2.

Fig. 1. and Fig. 2.—Cardiograms of salamander secretion on frog's heart.

Procedure: Frog pithed, heart exposed and perfused with salamander secretion in aqueous solution.

Effects: Progressive decrease in tone (amplitude) of contraction accompanied in most instances by dilatation. Continued perfusion has a depressive effect with periods of ventricular standstill of approximately two-minute intervals, followed by increased tone and decreased heart rate, the auricles beating at a faster rate than the ventricle. Pulsus alternanus predominates.

The auricles continue to beat, the ventricle stopping completely at intervals. This condition is a remarkable parallelism to the results obtained by Chen and associates (8) with toad venom.

Results: Irregular contractions with ventricular arrest, terminating in partial to complete heart-block, probably due to impaired conduction caused by injury of the auriculoventricular bundles.

On cat:

Procedure: Hypodermic injection.

Effects: With fatal dose the cat gives a series of symptoms. Five to 10 minutes after injection, the respiration was deeper and quicker, with a slowing of the rate of heart beat.

Results: The animal was nauseated and unable to hold up its head, lack of coördination was noticeable, the heart beat became irregular and respiration labored with gasping. Respiration ceased, while the heart beat (auricular) continued indefinitely.

SUMMARY.

(1) The natural secretion of the granular skin glands of the Salamander, *Triturus torosus* was studied.

(2) Preliminary studies demonstrated that the granular glands produce the toxic secretion.

(3) Local, circulatory and respiratory effects were observed.

(4) Decreased rate and amplitude of heart contractions with partial heart-block.

(5) Predominating effect observed upon the respiration.

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ERRORS IN REPORTED STUDIES OF ENTERIC COATINGS.*

BY F. S. BUKEY AND C. W. BLIVEN.[1]

Many papers have been published on the subject of enteric coatings. Numerous substances have been suggested for enteric material and various methods have been used to test their efficiency. Not all of these substances have value and in many cases erroneous results have been reported, due to the method of testing. The X-ray, although mentioned by several investigators, has been used by only a few of them. Lozinski and Diver (1) used the fluoroscope to locate enteric tablets after ingestion. Believing the X-ray to be the only satisfactory approach to the subject, we have employed it exclusively in our studies and feel certain that the results shown correctly reveal the fate of the tablets. A few earlier investigators

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* Section on Practical Pharmacy and Dispensing, A. PH. A., Portland meeting, 1935.

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stated the time necessary for disintegration. This, it seems to us, cannot be determined accurately, since the physiological factor enters into a study of this kind, making an *in vitro* study of little value. Apparently the solutions used to simulate the gastric and intestinal fluids react differently from the natural secretions. Subjects used in an X-ray study do not react the same to the same type of tablet on different days. It is impossible, therefore, to state how long a tablet will remain intact. The only statement that may be safely made is that concerning the percentage disintegration for a given time.

Lozinski and Diver (1), in their study, used two types of tablets, one composed of barium sulphate, and the other of sodium salicylate. They used the fluoroscope to locate the point of disintegration of the barium sulphate tablet while the disintegration of the sodium salicylate tablet was indicated by the presence of salicylate in the urine. They assumed that since the coating of the barium sulphate tablet withstood the action of the gastric juices the coating of the salicylate tablet was equally permanent. If fluoroscopy is to be used in a study of this kind, it would seem to be a better technique to use all barium sulphate tablets and thereby avoid any doubt as to the point of disintegration of the tablet. Bukey and Brew (2) found in cases where a number of tablets are taken together, that they do not, as a general rule, leave the stomach at the same time. The following cases can be cited to illustrate this point: Subject M. B. took 4 tablets at 7:00 A.M.; the first radiograph at 10:00 A.M., 3 hours, showed 3 tablets in the stomach and 1 in the small intestine; the third radiograph at 12 Noon, 5 hours, showed 4 tablets in the small intestine. Subject I. M. took 4 tablets at 8:30 A.M.; the first radiograph at 10:00 A.M., 1 hour 30 minutes, showed 4 tablets in the stomach; the second radiograph at 12 Noon, 3 hours 30 minutes, showed 3 tablets in the stomach and 1 in the small intestine; the third radiograph at 1:45 P.M., 5 hours 15 minutes, showed 4 tablets in the small intestine. Many other examples could be cited which would indicate similar results. Bukey and Brew (2) present evidence to show that the average emptying time more nearly approaches six hours than an hour and a half as indicated by Lozinski and Diver (1).

Wruble (3) reported a method for testing enteric coatings which appears to be of questionable value. His method consisted of preparing a tablet mass of such composition that each tablet contained the following:

Methylene Blue	1/4 grain
Calcium Sulphide	1/2 grain
Dextrin	1 grain
Starch	1 grain
Sugar	1 1/4 grain

Wruble made the following statement:

"These so-called 'double check' tablets may be used advantageously for such purpose. If the tablet in the course of digestion loses its coat in the stomach, the acid content will react with the calcium sulphide, giving rise to eructations of hydrogen sulphide gas. If in the intestinal fluid, a blue coloration in the urine will be observed. Should neither of these reactions be noticed it is ample evidence to show that the tablet has passed through the entire digestive tract untouched."

Considering calcium sulphide as a means of testing enteric coatings, it was calculated that 1/2 grain of calcium sulphide produces approximately 10 cc. of hydro-

gen sulphide gas which would be soluble in about 20 cc. of water. It appears that the solution of this amount of gas in the liquid of the stomach is possible without the occurrence of eructation. In order to make sure of this point, $^1/_2$ grain sugar-coated calcium sulphide tablets were given to a number of subjects. These tablets when placed in water were found to disintegrate in five minutes. To prevent any psychological effect, the subjects were not informed of the contents of the tablets but were merely asked at the end of one-half hour whether any eructation of hydrogen sulphide had occurred. It was found, upon giving tablets to 41 subjects, that 32 subjects reported no eructation, while 9, or 22 per cent, reported eructation of hydrogen sulphide gas. This shows conclusively that an enterically coated tablet containing calcium sulphide might disintegrate in the stomach without the production of eructation. Husa and Magid (4) studied the value of certain materials in preparing enteric capsules. These capsules were filled with a mixture similar to Wruble's calcium sulphide-methylene blue tablets and were tested according to Wruble's method. They also reported the use of orange shellac as a material satisfactory for enteric coating. Bukey and Rhodes (5) found that tablets coated with shellac are of no value. An X-ray study made by them of 24 tablets commercially coated with shellac showed that in every case disintegration took place in the stomach in less than 3 hours. However, they found that if a salol-shellac mixture were used as an enteric coating, the percentage of efficiency varied from 44 to 66.

The use of Wruble's method again appeared in an article by Johnson and Clark (6), in which they tested an application of salol as an enteric coating. Although they used this method, they made the following statement: "There is some question about the effectiveness of these tablets for testing enteric coatings as several students reported no eructations of hydrogen sulphide after taking the uncoated tablets." They found by this method of testing, that salol applied according to their method was an efficient enteric coating. They gave 60 tablets, one to each subject, and found that 52 tablets disintegrated in the intestinal tract and 5 disintegrated in the stomach. Three subjects reported no reaction, which would indicate that the tablets passed through the body unchanged. This point was questioned by the authors who suggested to Dr. Clark that he coat some barium sulphate tablets to be used for X-ray testing. This he kindly consented to do. Forty-seven such tablets were received and given to subjects. It was found that 2 tablets disintegrated in the stomach in 1 hour 30 minutes, 15 in 3 hours, 2 in 4 hours, 3 in 4 hours 30 minutes, 3 in 5 hours, 5 in 6 hours and 2 in 7 hours. Six tablets remained in the stomach without disintegrating at the end of 4 hours and 4 at the end of 6 hours. Only 1 tablet passed into the small intestine and disintegrated within 3 hours. Four tablets passed into the ascending colon in 3 hours and only 1 of these disintegrated. Of the tablets given, 32 disintegrated in the stomach and 2 in the intestinal tract. The point of disintegration of 13 tablets was not determined. Calculated on the basis of the number of tablets disintegrating, it was found that 94 per cent had disintegrated in the stomach.

In order to more accurately test their method of applying salol, additional barium sulphate tablets were coated by their method. After the application of three coats, it was found upon placing the tablets in water that disintegration took place. Therefore, a fourth coat was applied, which produced a coating varying from

0.5 to 0.7 mm. in thickness. The question arose as to the quantity of salol on each tablet. This of course would vary with the size of the tablet used. The tablets used in this experiment were 1.13 cm. in diameter and the coating averaged 0.16 Gm. per tablet. Two such tablets would be equivalent to the official dose of salol which, therefore, would give the therapeutic action of salol as well as that given by the tablet itself.

Forty-three tablets coated four times with salol as described above, were given to subjects and the time and place of disintegration were determined by means of the X-ray. It was found that 5 tablets disintegrated in the stomach in 2 hours, 2 in 2 hours 30 minutes, 14 in 3 hours, 7 in 4 hours and 5 in 5 hours. Three tablets passed into the ascending colon and disintegrated within 3 hours. Seven tablets remained in the stomach at the end of 5 hours without disintegrating. On the basis of the total number of tablets disintegrating, it was found that 91.6 per cent of the tablets disintegrated in the stomach.

These experiments show that salol is not an efficient enteric coating and they offer proof that the calcium sulphide-methylene blue method of testing gives erroneous results.

If it were possible to obtain salol which would not crystallize when applied, a better enteric coating would be produced. This was shown by Bukey and Rhodes (5) who tested two lots of commercial tablets of this type which had an average percentage efficiency of 55.

CONCLUSIONS.

1. The efficiency of salol as an enteric coating is low, even in mixtures with resins, because of its tendency to crystallize when applied to a tablet.

2. The most effective way to study enteric coatings is by use of the X-ray, which is most advantageously employed in the form of radiography because a permanent record is produced. Fluoroscopy is satisfactory but it has several technical disadvantages, such as the greater number of milliampere-seconds necessary for each exposure, consequently the individual subject cannot be used as frequently as in radiography, due to over exposure to the X-ray.

3. Because of the relatively small amount of hydrogen sulphide liberated and its ready solubility in the fluids of the stomach, the calcium sulphide-methylene blue method of investigation leads to erroneous interpretations of results.

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Temple University, Philadelphia, dedicated its New Library on February 22nd; it was financed by a Government loan of $550,000.00 and a benefaction of $278,000.00.

Pittsburgh has been selected for the 1936 meeting of the National Association of Retail Druggists. The headquarters will be the William Penn Hotel.

STUDIES ON THREE U. S. P. AND N. F. PREPARATIONS BY SHORTENED PROCEDURES.*,[1]

BY W. J. SMITH AND HENRY M. BURLAGE.[2]

One important function of the pharmaceutical laboratories of any school of Pharmacy is to study critically the U. S. P. and N. F. preparations and procedures with the aim of possible improvement of preparations and the shortening of procedures in order to reduce the cost of manufacture. In this manner there might be instilled in the mind of the present-day pharmacist the desire to prepare galenicals rather than the wish to follow the path of least resistance and to order these products from the wholesaler or manufacturer, and to convince him that many such items can be made more economically than they may be purchased. It is our firm belief that the future of pharmacy as a profession in a great part depends on the recreation of this desire in the minds of the practitioners of our profession.

With these purposes in mind the following preparations were studied:

COMPOUND SOLUTION OF CRESOL U. S. P.

This valuable antiseptic solution also known as Cresol Soap Solution and sold under several trade names of varying composition cannot be made according to the official procedure (1) profitably by the pharmacist, since it involves the preparation of a soap from linseed oil and sodium and potassium hydroxides which with water serves as a vehicle for the distribution of the cresol (50% V/V). Experience has proven that the manufacture of a non-irritating soap is a difficult and tedious task, especially if made in small quantities. The official method is time-consuming and the prolonged heating necessary to bring about saponification yields a much darkened product which possesses a fairly high degree of alkalinity.

Since there is considerable demand for this product by the laity our efforts were directed toward a study of proposed methods or modifications whereby the time of manufacture might be reduced so that it might be made with profit and yet meet the U. S. P. requirements. A review of the literature revealed that some work has already been done along these lines. Nitardy (2) has offered a formula whereby a potassium soap is prepared and this with alcohol serves as the vehicle; this method is similar to that offered by LaWall and Cook (3). In 1924, Griffith (4) suggested the use of equal weights of cresol and soft soap and quite recently Berry (5) has prepared a sodium oleate soap to be used in the formula. Following Griffith's suggestions our observations show that a product which apparently meets official requirements may be made according to the following formula:

Cresol, U. S. P.	500 cc.
Sapo Mollis, U. S. P.	555 Gm.
To make	1000 cc.

(*a*) By heating to 70° C. or (*b*) by shaking until solution is effected.

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* Practical Pharmacy and Dispensing, A. PH. A.

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TABLE I.—COMPARISON OF COMPOUND SOLUTIONS OF CRESOL BY PROPOSED METHODS.

Method.	Approx. Time for Preparation.	Color.	Specific Gravity (25° C.).
U. S. P. X	7.25 hrs.	Dark brown	1.029 (+)
Nitardy	29.00 mins.	Dark brown	1.042
Berry	9.00 mins.	Light amber	1.023
Burlage			
(*a*)	5.00 mins.	Light amber	1.032
(*b*)	6.00 mins.	Light amber	1.035

NOTES: (+) Average value from four different samples which were 1.030, 1.030, 1.030 and 1.027. (*a*) heating to 70° C.; (*b*) shaking until solution takes place.

While p_H values are not reliable when made electrometrically using a quinhydrone electrode on preparations that tend to be fairly alkaline, when prepared by the suggested method results seem to indicate a soap solution of lower alkalinity than by the other methods reported.

COMPOUND SOLUTION OF SODIUM PHOSPHATE, N. F.

This preparation approximates a saturated solution of sodium phosphate with citric acid to aid and maintain solution and glycerin added to improve the taste and preserve it. The chief difficulties arising in its preparation are: (*a*) According to the N. F. formula (6) the salt in the uneffloresced condition is required. It has been found almost impossible to obtain this salt in this form because of unsatisfactory storage and shipping conditions. The solution, therefore, generally contains slightly more of the solute than is necessary for a saturated solution under normal conditions and precipitation to a varying degree occurs upon standing; (*b*) moistening with water to insure the completely hydrated salt as recommended by the N. F. is tedious and decidedly unsatisfactory; (*c*) the solution thus prepared is exceedingly difficult to filter and makes the process time-consuming. In 1921, the following formula was proposed by H. M. Faser (7) in which the exsiccated salt was used, thereby being assured of using the proper amount of salt:

Exsiccated Sodium Phosphate	396.5 Gm. (= 1000 Gm. of crystalline salt)
Citric acid	130.0 Gm.

Dissolve the chemicals in 800 cc. water, heat to boiling and filter into a sterile container, add glycerin (150 cc.) and sufficient boiled water to make 1000 cc.

Our studies prove this method to be highly satisfactory, yielding a solution which keeps well and may be prepared with an appreciable saving of time, at approximately two-thirds of the wholesale price of the N. F. solution. The following table shows a comparison of the official product and that made by the Faser Method:

TABLE II. COMPARISON OF COMPOUND SOLUTIONS OF SODIUM PHOSPHATE.

Sample No.	Method.	p_H.	Sp. Gr. 22.5° C.	Precipitation After Six Months.
1	N. F.	2.9	1.283	Slight
2	N. F.	2.8	1.395	Slight
3	N. F.	2.9	1.407	Slight
4	N. F.	3.0	1.335	Slight
		Av. 2.9	Av. 1.372	

5	Faser	5.35	1.315	Negligible
6	Faser	5.50	1.357	Negligible
7	Faser	5.30	1.345	Negligible
8	Faser	5.3	1.287	Negligible
9	Faser	5.2	1.322	Negligible
10	Faser	4.5	1.316	Negligible
		Av. 5.21	Av. 1.322	

It will be noted that the N. F. product shows a lower p_H value and slightly higher and more variable specific gravities than that by the Faser method and was also less stable.

AROMATIC ELIXIR, U. S. P.

This universally popular elixir has long been the subject of much study by workers with the view of shortening the time for filtration and preparation and improving its flavor. In 1932, one of us (8) offered the results of his studies on five procedures for preparing this product: (*a*) U. S. P. method modified as to order of mixing (*b*) U. S. P. method (9), (*c*) Shiflett's method (10), (*d*) Silver's modification (11) and (*e*) U. S. P. method doubling the amount of talc. The products were studied on the basis of time consumed in preparation, percentages of alcohol by volume, specific gravities, specific rotations, percentages of volatile oil and orders of mixing, and as a result the procedures of Shiflett and Silver were found to be simple, rapid and yielded satisfactory products. These were recommended in place of the official method, with a preference for Shiflett's method since it yields a product conforming more nearly to the official one on the basis of the studies carried out and is slightly more rapid.

Since the above report was made the following workers have studied this elixir and offered suggestions: Fantus and co-workers (12) offer these rules for preparing the galenical: (*a*) viscosity must be kept low until after clarification in order to facilitate filtration, (*b*) filtration using talc and other clarifying agents (as shown by Burlage's report) must be abandoned because it is time-consuming and wastes oil and (*c*) avoid precipitating the oil globules in such a fine condition that they will pass through a filter paper and in turn a longer time for saturation should be allowed. They prepare the elixir by mixing all of the water with the alcohol, adding the compound spirit, allowing to stand for 24 hours, agitating frequently, filtering through a hard filter without the use of any absorbent and finally dissolving the sugar in the filtrate.

Lee and Close (13) in an exhaustive study which includes an extended bibliography of the work done on this elixir prior to 1933 present a discussion under the following headings (*a*) flavoring agents, (*b*) alcohol and sugar contents, (*c*) clarifying agents and (*d*) methods of making. Fourteen procedures or modifications are followed and in a table the following are reported: (*a*) appearance of the finished product, (*b*) number of times filtrate is returned to filter before a clear product is obtained, (*c*) rank as to time required for filtration and (*d*) the condition of product after two years on the basis of odor, taste and sediment. In the table Shiflett's method has a ranking of 7, a procedure in which sugar and water are substituted for syrup 3, U. S. P. method, using in place of talc purified siliceous earth 4, using kaolin 2 and magnesium carbonate 1. They recommend the following formula and method:

Compound spirit of orange	12 cc.
Purified talc	30 Gm.
Sugar	320 Gm.
Alcohol	the desired amount
Distilled water to make	1000 cc.

Mix the spirit and talc by trituration, add about 800 cc. water in convenient portions and triturate after each addition, agitate frequently for about 15 minutes and filter in the usual manner. Dissolve the sugar in 550 cc. of the clear filtrate and to it add the desired amount of alcohol and make up to 1000 cc. with the required amount of clear filtrate.

This procedure is recommended because the time required to prepare the product is about one-tenth of that for the official elixir; the alcohol strength may be varied at will without modifying the technique of the preparation and is always clear regardless of the variation in alcohol content.

About the same time Havenhill and Smolt (14) reported that the terpenes present in the aromatic oils of the compound spirit of orange, since they are not soluble in the dilute alcohol used, are almost completely precipitated and are the chief causes of the difficulties arising in elixir preparation, and that the oxygenated principles of the oils are the desirable constituents, which do not cause cloudiness. Their studies involved (*a*) the determination of the alcohol strength that could be used in preparing the compound spirit that will extract sufficient oxygenated principles but not enough terpenes to precipitate even upon dilution in making the elixir, (*b*) the estimation of the strength of the new compound spirit as compared with the official one with regard to oxygenated principles, (*c*) the determination of the relative amounts of these principles in the official elixir and (*d*) the calculation of the amount of soluble spirit necessary to make an elixir similar in flavoring strength to the one recognized. Two formulas for the soluble compound spirit are offered: (*a*) using the official compound spirit and (*b*) using the required oils, as well as one for an aromatic elixir using these soluble compound spirits and requiring no filtration. A study of this method revealed it to be quite wasteful of oils.

As a result of this latter work it occurred to us that since terpeneless oils can now be purchased reasonably, these oils might be used in making a compound spirit of orange to prepare a satisfactory elixir. This idea is not entirely new, as Jones (15) in 1922, proposed a formula in which a soluble compound spirit consisting of terpeneless oils of orange and lemon with anethol and coriander was used. Accordingly two compound spirits were prepared: (*a*) by substituting for the oils in the official spirit the like amount of terpeneless oils and (*b*) since these oils are much higher in desirable principles than the official oils, one-tenth of the amounts of oils as employed in (*a*) were used. These spirits were then employed in making the elixir by the official procedure, omitting talc. Since the finished product is slightly opalescent it is filtered through a hard filter. Usually one filtration only is necessary. The product thus obtained is brilliantly clear, has a delightful odor and taste which may be varied in degree by using variable amounts of the new compound spirits.

Further Studies on Aromatic Elixirs.—In preparing a display to show the evolution of this much used elixir it was found that since 1871 about fifty procedures have been offered (see reference 13). Further examination demonstrated that the following comments or observations can be made (*a*) clarifying agents recommended were

paper pulp, magnesium carbonate, calcium phosphate, talc, kaolin and infusorial earth, (*b*) specific gravities varied from 1.027–1.133, (*c*) p_H 4.2–7.7. Those using $MgCO_3$ as filtering agent showed a range of 6.05–7.7; with calcium phosphate, 4.8–5.85, with talc 5.75–6.85, kaolin 6.5 and infusorial earth 6.3.

TABLE III.—COMPARISON OF AROMATIC ELIXIRS MADE BY VARIOUS FORMULAS.

	Method.	Filtering Medium.	Rating as to Time Consumed.	Spec. Gr.	p_H.
1.	Shiflett	(*a*) Talc	3	1.140	4.0
		(*b*) Talc		1.057	See Reference No. 8
2.	Silver	(*a*) Talc	3	1.112	3.8
		(*b*) Talc		1.069	See Reference No. 8
3.	Fantus	(*a*) Hard filt.	3	1.099	5.6
		(*b*) Hard filt.		1.086	6.0
4.	Lee and Close	(*a*) Talc	2	1.104	6.3
		(*b*) Talc		1.057	5.3
5.	U. S. P. Modified.	$BaSO_4$	4	1.102	4.2
6.	Havenhill and Smolt*	(*a*) —	4	1.080	4.2
		(*b*) —		1.095	4.3
7.	Burlage and Smith	(*a*) Hard filt.	1	1.084	6.6
		(*b*) Hard filt.		1.075	6.5
		(*c*) Hard filt.	1	1.080	6.7
		(*d*) Hard filt.		1.051	...

	Sediment.	Color.	Odor.	Taste.	Comments.
1.	+++	sl. y.	or.	unp.	Made May 1934
2.	++++	sl. y.	or.	ter.	Made May 1934
				n. unp.	
3.	+++++	milky	sl. or.	n. unp.	Made May 1934
	+	clear	or.	n. unp.	
4.	+	clear	sl. or.	p.	Made May 1934
	None	clear	sl. or.	p.	
5.	+++++	milky	or.	p.	Made May 1934
6.	++++	clear	or.	unp.	Made May 1934
	++++	clear	or.	unp.	
7.	None	clear	or. bl.	p.	Terpeneless oils for oils in U. S. P.
	None	clear	or. bl.	p.	Com. Spt.
	None	clear	or. bl.	p.	1/10 amt. of terpeneless oils as in (*a*)
	None	clear	or. bl.	p.	and (*b*)

NOTES:* Rating of 4 includes time for making the sol. spirit; if this is disregarded rating is 2. sl. y. = slight yellow; or. = orange; sl. or. = slight orange; or. bl. = orange blossom; unp. = unpleasant; n. unp. = not unpleasant; ter. = terebinthinate; p. = pleasant. All elixirs unless otherwise designated were examined after four months, and all used Compound Spirit of Orange, U. S. P., except the methods of Havenhill and Smolt and Burlage and Smith.

In a study of Table III it is interesting to note that the older samples showed a sediment from slight (+) to considerable (+++++), that there is an appreciable increase in specific gravities on aging which might be caused by a gradual loss of alcohol or volatile oil or due to other changes which no doubt occur since the p_H values of the older samples in most cases were lower than the average p_H (6.3) for elixirs made by using talc or those of the fresher samples. These changes are also accompanied by some alterations in color, odor and taste. All samples were preserved in well-corked containers and kept in a room at a fairly constant temperature.

SUMMARY.

(1) A rapid method for preparing compound solution of cresol is offered.

(2) The method of Fraser for preparing compound solution of sodium phosphate is recommended in place of the present N. F. method.

(3) Methods proposed since 1932 for the preparation of aromatic elixir are reviewed and the preparations so made are studied.

(4) A reasonably rapid method for making this elixir from a compound spirit of orange with terpeneless oils is recommended.

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THE PHARMACOGNOSY DEPARTMENT AT EGYPTIAN UNIVERSITY.

BY RALPH BIENFANG.*

Egyptian University is located in Cairo, and was founded in 1925. It offers instruction to Egyptian youth in four faculties: letters, law, sciences and medicine. Instruction in pharmacy is given in the faculty of medicine, hence the pharmacognosy department is within that faculty.

The original director of the pharmacognosy department, called by the University in 1925, is still directing its activities. He is Dr. Ibrahim Ragab Fahmy, who first qualified in Egypt, and then studied under Greenish, Tschirch and Wasicky. He is author of numerous research papers on Egyptian medicinal plants and drugs, some of which have been published in English, and also of two textbooks in pharmacognosy: "Medicinal Plants and Their Vegetable Drugs," Cairo, 1932, and "Constituents of Plants and Crude Drugs," Cairo, 1933. These texts are published in English; the first, however, has an auxiliary table of contents in Arabic.

Dr. Fahmy is assisted in his department by two lecturers qualified from the University of London, one holding the B.Pharm., and the other both the B.Pharm. and the Ph.D.; a curator of the museum holding the B.Pharm. from Egyptian University; and a fourth who is at present on a mission in Berlin.

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Instruction in pharmacognosy for the hundred students usually enrolled in pharmacy extends over three years as follows:

In the first year the students are given three lectures, two practical classes of three hours each, and one hour of demonstration in the museum per week. The theoretical course deals with the study of the groups of the vegetable kingdom. The drugs obtained from each group are dealt with in detail from the following points of view: geographical distribution of the drug-yielding plants, and methods of cultivation, period of collection and preparation for market, morphology, anatomy, constituents, uses, commercial varieties, the chief adulterants and substitutes, and history of the drug. The practical course includes the study of the morphology and histology of the drug and its varieties, if any.

In the second year the students are given four lectures, three practical classes of three hours each, and one hour of demonstration per week. The theoretical course deals with the study of the chemistry of the constituents of the vegetable drugs classified according to their chemical nature. The following groups are dealt with: Alcohols, carbohydrates, glucosides, tannins, pigments and coloring matters, acids, bitter principles, fixed oils, fats and waxes, ethereal oils, oleoresins, resins, gum-resins, balsams, alkaloids, proteins and enzymes, vitamins, etc. The practical course includes the detection, chief reactions, estimation and isolation of the chief members of the above-mentioned groups. Also the standardization of the pharmaceutical preparations which include any of the above groups is carried out.

In the third year the students are given two lectures, two practical classes, each of three hours, and one hour of demonstration per week. The theoretical course deals with the application of the knowledge of the first- and second-year courses in the analysis of the vegetable powdered drugs and products according to the pharmacopœial standards. The practical course includes the study of the vegetable powdered drugs and the microchemical tests of their constituents, if any, and also the detection of adulterations in powdered drugs both by microscopical and chemical means. The analysis of mixtures of the same and the identification of vegetable powders in pharmaceutical preparations are also dealt with.

In addition to the undergraduate instruction given, the department maintains an active research laboratory, results of work in which are usually published as a special volume of the "Report of the Pharmaceutical Society of Egypt."

A COURSE IN THE STUDY OF DRUG STORE SUNDRIES.

BY HAAKON BANG.*

According to figures published in the *American Druggist* by Dean DuMez, approximately 69 per cent of his graduates go into retail stores. A great many of these later become owners or managers of stores. Of course the pharmacist must know as much as possible about the medicines he dispenses, but he must also know as much as possible about all of the merchandise sold in drug stores. The knowledge is not only necessary to himself in selling, but also in training those who work for him.

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Merchandise on the shelf does not bring profit. It takes salesmanship to bring about the sale of this merchandise. As salesmanship depends upon a thorough knowledge of the articles to be sold, it is therefore necessary first to acquire such knowledge.

The schools of pharmacy are probably the best places to impart knowledge as it is more apt to be given impartially. It is much easier to obtain such information from the college libraries than from the libraries of some of the small towns in which the drug store may be located.

Oftentimes the man working in a store does not have the time nor facilities for digging out information which would aid him in selling the merchandise which he keeps in his store. It is better, then, that this be done in school where the future pharmacist has the time and is in a receptive mood.

As to what should be taught would depend, to a great extent, upon the conditions met with in that particular district and for what type of work the student is being prepared.

The syllabus appearing in the November (1931) issue of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, prepared by Dr. C. W. Ballard is excellent and meets the needs of a course of this type. The course as outlined deals with appliances having a pharmacologic or therapeutic aspect. This course has a professional pharmacy air, but it could be made more commercial in nature. There are certain phases which might be discussed in this course.

The technique of using a camera and choosing film material could be included in a course of this nature. Many students who are not amateur photographers would not know how to instruct their customers in the proper use of the camera and its accessories, nor would they be able to instruct their sales force. Even handling the material in a store may not give a person enough information to properly fit him to sell. There is no question about the value of a photographic department in the drug store. People expect the country or suburban store to develop their films and handle their photographic wants. It is probably true that no other department, with the exception of the prescription department itself, yields a larger gross profit, a greater turnover, or will bring the customer in more frequently. In many stores the photographic section receives an important place in the store, especially during the vacation season. Is it not, then, desirable to have well-informed clerks care for this department? A great deal more business may be worked up in this division if the man in charge is a photographic enthusiast. It is often possible for the druggist to organize a camera club and, by instructing members in the use of the camera and its appliances, increase sales of camera supplies.

Lecture material may be obtained for this section from the Eastman Kodak Co. and, also, by studying literature found in the library on this subject. Certain books on optics clearly describe lens and film equipment.

Another profitable line among drug sundries is bristle goods. When a customer wants a brush he immediately thinks of the drug store, especially if he lives in a small town. Lecture notes on the history, method of manufacture, sales points and methods of care and preservation are very hard to find, yet it should be included in this course. Generally the busy practicing pharmacist does not, or cannot take time to get this material himself. It is best, then, that he learn this in college.

Manufacturers of bristle goods are glad to coöperate with the instructors to

furnish lecture and demonstration material on this subject. The types of brushes which should be considered and which are listed in Charters' report are hair, tooth, bath, bottle, hand, camel's hair, nail, massage, complexion, eye brow and face brushes, given in order of their importances. Shaving brushes also should be discussed.

It has been the experience of every salesman that it is possible to sell a more expensive article, providing he can point out to the customer the quality of the more expensive one, showing why it would pay to purchase quality merchandise. In this way much bristle goods business which is now going to the variety store may be brought back to the retail druggist.

A study of foot preparations may also be included in this course, as they occupy an important place in the drug store. It is possible to sell related appliances provided something is known about this class of merchandise; for instance, how many druggists will suggest the use of a metatarsal arch support to a customer who is suffering from soft corns? Yet, about 90% of soft corns are caused by a weakened metatarsal arch. Such information makes it possible for druggists to increase their sales and thereby their profits.

In visiting a number of stores this summer, and speaking to the proprietors or managers of the stores, I found the greatest criticism of the graduate was that, although his theoretical training was good, his practical training was lacking. In the front of the store he was a liability rather than an asset.

By including courses of this nature, which would familiarize the graduate with the articles commonly sold in drug stores, this criticism would largely be overcome.

It would not be necessary to make this course required. If a student plans on entering the retail pharmacy field he will see the value of training in this line. If he intends to follow scientific lines he may find other courses more valuable to him.

A course of this nature may be made interesting by including the history of various items discussed. Sales talks, by various members of the class, with criticism, may also be used, although this must be limited, as time generally does not permit extended discussion. However, certain errors in salesmanship may be shown and the students become more critical of themselves and others.

THE PRESENTATION OF BASIC SCIENCES IN A SCHOOL OF PHARMACY.*

BY T. C. DANIELS.[1]

In November of 1933, an article appeared by Klemme (1) on "Why Organic Chemistry Should Be Taught in the School of Pharmacy," in which an appeal is made to stress the application of this subject to the professional needs of the student. The article presents one side of a fundamentally important question in Pharmacy education. Since my experience is somewhat at variance with the views expressed in this article, I should like to present for your consideration some reasons why Organic Chemistry and other basic sciences should not be presented with this so-called "pharmacy-slant."

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* Section on Education and Legislation, A. PH. A., Portland meeting, 1935.

[1] University of California, College of Pharmacy.

I believe pharmacy education has suffered more as the result of modification and attempted application of the basic sciences than from any other single educational factor. This method of presentation was a necessary evil when the two- and three-year curriculums were standard, but in a four-year curriculum it is not necessary nor justifiable. The fundamental method of approach as advocated by Harrod (2), Little (3), Jenkins (4), Fischelis (5), Rudd (6) and others decidedly represents the preferred method of instruction.

There have been many attempts to modify textbooks of Chemistry, Physics and Botany "to meet the needs of students of Pharmacy." These attempts for the most part have resulted in abbreviated, simplified texts partially or wholly inadequate for their intended mission. How many applied texts in chemistry or physics have you examined that you consider the equal of a sound text concerned only with the presentation of the fundamentals of the science? The pharmacist of the future, in order to properly discharge his duties, must be thoroughly trained in the fundamentals of physics, chemistry and the biological sciences, otherwise his professional service is limited largely to the status of a pseudo-technician having little understanding of his chosen work. It must be recognized that a broad and adequate foundation in the basic sciences is a prerequisite to their application which must follow. Indeed, pharmacy consists essentially in their application. "Watered courses" in these sciences are a menace to the proper growth and development of the profession.

We must all agree on the absurdity of expecting a student to apply a science without having first mastered its principles and gained a proper perspective of its significance.

There is a great deal of truth in the statement that "a little knowledge is a dangerous thing." Does the pharmacy student require less of the "fundamental principles and their application" than the chemical engineer? Does he require less of a knowledge of "reaction mechanism, atomic and molecular structure and the application of physico-chemical methods to the synthesis and analysis of chemical compounds" than the student majoring in chemistry? If that is your opinion, then you must also believe that it is unnecessary for the pharmacist to know anything of the syntheses and development of new drugs or of their physical and chemical properties. Without such training all information on substances of such complexity as drugs must necessarily be gained by rote. This is neither feasible nor desirable.

In order to arrange for a satisfactory transfer of credits from colleges of pharmacy, it is necessary that educators in other fields give full recognition to the courses in basic science. This recognition will largely depend on the contents and method of presentation and only where basic and fundamental instruction is rigorously employed can it be expected to meet with approval.

The proponent of the applied system of basic instruction will say, to be sure we must teach the principles of these sciences, but why not point out to the student, in passing, points that are of interest to his profession? I believe such teaching is psychologically unsound, because the pharmacy student is above all interested in those things which apply to pharmacy, and if principles are continually referred to the thing in which he is most interested it becomes for him a detached fact applicable to his interest, and not a principle which can be employed as such. Fur-

thermore, there is a tendency for the student to over-emphasize those things which apply directly to his profession and to consider all others of lesser importance. To clarify this point somewhat, assume a course is being offered in Analytical Chemistry for students of Pharmacy and in order to present an applied course official preparations are selected for the instruction. The student may master fully the material presented. He may be able to write chemical equations, and give explanations for the reactions involved, but unfortunately he is not grounded in the principles necessary to permit him to work independently. He is more than likely to be at a loss when placed on his own initiative. It is true he has learned many facts concerning analysis but nothing of principles which he is capable of applying to new problems. On the other hand, if he had mastered a sound course in the principles of analytical chemistry without reference to its application, his chances for working independently are much greater whether the work is, or is not, related to medicinals. In my own opinion, time spent in the application of a basic science is time not only lost in the development of the subject, but that it serves also to confuse the student because of the cross-objective fundamentals and their application.

In the examples of ether and chloroform mentioned by Professor Klemme, certainly no harm results in pointing out that ether is capable of peroxide formation and that chloroform is stabilized by the presence of a small amount of alcohol, etc. It is, however, to my way of thinking, a very serious mistake to discuss ether and chloroform of the United States Pharmacopœia in a basic course in organic chemistry. The teacher of a basic science must remember that he is teaching a subject; whether he is teaching a group of chemical engineers, pharmacists or chemistry majors is purely incidental and ideally should have no influence in the presentation of the subject. He is concerned with the teaching of basic principles only and the more successful he is in this instruction, the easier it will be to apply the subject in courses which must follow. In order to cover the principles of organic chemistry, and to attempt application at the same time as suggested by Professor Klemme, it would require a year course of at least ten units per semester, and even with such a course it is quite problematical if the student would finish with a useful perspective of the subject.

As to whether the basic science courses are presented in the colleges of pharmacy proper, or are presented in their respective academic departments, is a matter of no great concern and should depend entirely on the facilities and general organization of the school. It is of great importance, however, that wherever they be given, they shall be presented in a purely academic and fundamental manner.

I do not wish to be dogmatic on a subject having so many variable factors as teaching. It is commonly recognized that a great deal depends on the individual teacher, his training and experience, but I do want to call your attention to the danger of encouraging application of the basic sciences as a general educational policy. If teachers of such courses, with pharmacy training as a background, fail to recognize this danger, then teachers having no training in pharmacy should be preferred for the presentation of these subjects.

There is time available in a four-year curriculum in pharmacy to give good fundamental training in the basic sciences, with time remaining for their proper

application. Students receiving such training will be able to work with greater understanding and be better prepared for handling their professional problems.

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ENTANGLING ALLIANCES.*

BY W. F. RUDD.[1]

The price we pay for experience is disillusionment. The enthusiasm of youth sees the highways of life largely as parallel ways with few convergencies and fewer dangerous intersections: and so it goes all through early adolescence. Whether the issue be work or play or love or ambition, youth treats them all as individual problems.

Hardly are we out in the world, however, when the picture changes abruptly, and often completely. Decisions on any important issue are inextricably interwoven with decisions already made, and with others that we little dreamed would be so promptly forced upon us.

Trite observations, you will say, and they are. But upon just how well we learn to avoid unnecessary entangling alliances, or finding ourselves already in them, how well we are able to balance them against one another in the light of the principles involved or in the light of our experience, is at least one measure of our ability to make a place for ourselves in the world.

Just what all this has to do with the section on Education and Legislation is a natural inquiry. My only apology for this paper is that in my deliberate judgment few of life's activities present more of them and more dangerous entangling alliances than does the broad field of pharmacy.

One speaks with confidence only from one's own experience. It is therefore necessary to be somewhat detailed and personal in this brief paper. College of Pharmacy deans and their staff members have opportunity to see the currents and cross currents in pharmacy in a most intimate fashion. Nor are we permitted to live apart and watch these currents in an impersonal way. We are caught in them, whipped about, lose our moorings, are temporarily submerged and some of us lose out permanently. The more stalwart ones emerge battered and bewildered but usually, perhaps, better prepared for the next emergencies. There is no excuse for such figures of speech except that one naturally hesitates to approach the subject boldly and in detail. However, a few concrete examples of some of the more important cross currents which have materially affected pharmacy may be cited to indicate how involved it all is.

A common experience among our group is some sort of consulting connec-

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* Section on Education and Legislation, A. PH. A., Portland meeting, 1935.

[1] Department of Pharmacy, Medical College of Virginia.

tion in pharmacy, chemistry or other closely related fields. Such connections may extend all the way from strictly ethical problems, such as finding profitable and legitimate uses for by-products or changing the method of manufacture to increase the yield and decrease the cost, to that of being called as an expert witness in defense of some widely advertised and falsely acclaimed nostrum. In between these extremes are all sorts of problems just on the border line between right and wrong. Each case must be decided on its merits and the more questionable the issue the larger the money temptation usually is. Practically every man in this group has had issues of this nature to decide and with our conscience as our guide many of them have given us restless nights. Early in my own work I was asked by a friend, who operated a large tannery, to help him find something that their leather would absorb readily. Of course, it must not be harmful to the leather but it must be heavier than and cheaper than the leather itself. The object was that they might manufacture their product at a price per pound with more profit than their competitor's product not so heavily loaded with cheap material. I think you will all agree that a college of pharmacy dean or teacher associated just once with a recognized fraud or who uses his influence with his own students for personal gain, necessarily loses much of that finer ethical sense and power for pharmaceutical righteousness that all of us covet for ourselves. Later, after becoming a college dean I was asked to take over the state agency for a well-known insurance company.

Another cross current in which we frequently find ourselves is the pressure to allow the use of our names in connection with all sorts of advertising schemes. Usually the invitation comes to us as what would seem to be a wholly innocuous suggestion. Do you favor the use of pure chemicals and standard pharmaceuticals in prescription work? If you do, say so in a few well-chosen words and let us publish your stand on this important matter. So far this is perfectly good form. However, the page on which one's picture and the word of endorsement of pure products in prescriptions are published probably carries the ad of A's chemicals or B's pharmaceuticals. And so there you are. Nothing wrong in it all, but usually if we had fully realized just what sort of position we were being jockeyed into, we would have been a bit more careful, perhaps. Look over your files and see how many times across the years this sort of invitation has come to you.

How many students our colleges of pharmacy should train so that pharmacy itself may be most adequately served is a controversial subject of major importance. There are honest differences of opinion on the subject among men who are close personal friends.

Unfortunately the economic status of the schools themselves is one of the determining factors in the point of view of the administrations involved. Where all the income must come from student fees, the pressure to take large numbers is sometimes overwhelming. Where salaries seem reasonably secure whether the student body is large or small, we are apt to become hypercritical of the men who yield to the pressure to train many more pharmacists than we believe are needed. These cross currents have at times threatened to split our forces irrevocably and in instances have occasioned fundamental dissentions.

It seems reasonably safe to say that until all the schools of pharmacy are able to derive a fair share of their income from endowment or state aid it will be impossible to reconcile these extreme points of view.

The gradual disappearance of much of the orthodox prescription building of the old-time physician and the substitution therefor of pharmaceutical specialties better known as proprietaries is deprecated by the best there are in retail pharmacy of to-day. How it has come about need only to be sketched here. Laboratory workers in Pharmacology in medical schools became therapeutic nihilists; therefore, little materia medica and less prescription building were taught embryo physicians.

These same young doctors are therefore the legitimate prey of every ready-made product that the skilful detail man brings to them in this time of their utter ignorance of how to select or how to put together the proper medicaments in orthodox fashion. The paradoxical part of this is that the same manufacturer who asks the physician to specify and the druggist to stock his regular pharmaceutical line, pushes to the limit already prepared combinations of these same samples, frequently, as we know, to the detriment of the physician, the pharmacist and the patient. This chain of entangling alliances is one of the most difficult problems in pharmacy. What is to be done about it is a primary concern of pharmaceutical educators and retail pharmacy, and if ever settled, must be done by these two groups working together closely with practicing physicians everywhere.

The U. S. P. is both the pride and the prize of American Pharmacy. The pride because it is accepted as the government standard for drugs. And the prize because the control of its business affairs and its decennial revisions carry definite prestige and, in instances, considerable financial rewards to individuals and groups chosen for this work. Some day a story of the entangling alliances that have existed, and still exist, in order to retain or to change this control, will make perhaps the most interesting chapter in the whole history of American Pharmacy. We speak feelingly on this subject.

In the three U. S. P. conventions we have been privileged to attend, these cross currents have become whirlpools and have aroused strong and even bitter antagonisms that last sometimes across the intervening decades. It is safe to say that in no pharmaceutical activities in this country do we find ourselves in a better position to accurately discriminate among men. Where loaves and fishes are to be distributed the true characters of individuals and groups stand out in bold relief. If you want to see entangling alliances at their worst, sometimes at their best, get on the near inside of the next U. S. P. Convention.

The most recent and in many respects the least understandable entangling alliance that can be laid on pharmacy's doorstep is the attitude of the nationally organized groups in pharmacy toward proposed new food and drug legislation.

A roll call of these organizations is probably in order. Those holding membership in the N. D. T. C. are the most representative and are as follows: AMERICAN PHARMACEUTICAL ASSOCIATION, National Association of Retail Druggists, American Drug Manufacturers' Association, American Pharmaceutical Manufacturers Association, The Proprietary Association, National Association Boards of Pharmacy, American Association of Colleges of Pharmacy, Federal Wholesale Druggists' Association and the National Wholesale Druggists' Association. Since these reasonably well cover the field, others will be omitted.

Probably every close student of pharmaceutical affairs who knows the nature of the pharmaceutical interest or personnel of the leaders in these individual groups,

or both, found themselves early in the discussions of this legislation wondering just what would be the attitude of these same individuals and groups toward it.

Would the groups whose primary concern is public health stand together or would there by a line-up that on the surface at least seemed hopelessly entangled? Would all of the colleges of pharmacy favor rigid control of the advertising and sale of standard nostrums? Would the parent organization, the A. PH. A., lend its influence to the kind of legislation favored by the colleges, or would it find itself closer to the patent medicine group? Would the N. A. R. D. when face to face with its public health responsibility meet the obligation squarely on its merits? Would men who by virtue of their ability and long experience in many phases of pharmacy have become recognized leaders among us, take their stand on the side of public welfare or in the protection of the interests? Questions of this nature forced themselves on you and on me. If you have followed the course of this legislation closely during the two years it has been in the public eye, many of these questions have been answered for you. And in instances the answers probably leave you bewildered.

And so we could add to this list of entangling alliances in pharmacy almost indefinitely, but to prolong it is futile.

What sort of influence on pharmacy of to-day have these cross currents had? Why have we too many pharmacies and too many pharmacists? Why do we have interlocking directorates which make it impossible for one to tell just where many leaders in pharmacy will stand on important pharmaceutical questions? Why have the proprietary interests been able to develop so powerful an influence in the whole field of pharmacy? Why has prescription practice fallen to so low a plane? Why have we so much desperate commercialism in a public health profession?

Why are we the butt of the jokester? Why is there no organization in pharmacy that can speak for all of pharmacy?

You are entitled to answer these questions in your own way. Calmly and deliberately I am constrained to believe that entangling alliances for the sake of loaves and fishes are responsible for much of our desperate condition. Relatively few of us have believed profoundly that public health is the one real objective of pharmacy. Failure in this great fundamental has led us into one error after another. Few of us have had a single purpose and a single interest in our work in pharmacy. I, along with many of my close friends, must plead guilty to this charge. Younger men have seen us sell our birthrights for a mess of pottage, and they have followed our examples.

And is there no hope? Is there no silver lining to this picture of our profession which we see painted darkly almost as often as we see it painted at all? Shall we tell our young men and women not to prepare themselves for a service whose present status is so hopelessly involved?

I am going to be bold enough to say that if the situation is ever to grow better we school-men have got to accept the major responsibility for making it so. With forty-four states now requiring college training as a prerequisite for pharmaceutical practice, and practically all the colleges requiring the standard four-year course, it has been put into our hands to bring about in the next half century three things which will at least help untangle this complicated web which is called modern pharmacy.

In the first place the schools of each state must work toward a greatly reduced number of pharmacists. With this will, inevitably, come a gradual decraese in the number of pharmacies, and no permanent change for good can be effected until this is done. Economically and as a corollary, professionally, this is a crying need.

In the second place we must train students who pass through our hands to be primarily public health conscious. No one school nor small group of schools can do this colossal task. It must be nation-wide in its scope. The American Association of Colleges of Pharmacy must make this its primary concern.

The AMERICAN PHARMACEUTICAL ASSOCIATION must rededicate itself to the task.

The N. A. R. D. can do no better service for its constituents than to everlastingly preach the gospel that "A well-informed pharmacist is the best single individual to disseminate information about public health."

Men trained to this point of view should alone manufacture or distribute medicinal agents of any description.

In the third place, and this is the crux of it all, and by far the most difficult to do, we as educators must see to it that we do not allow ourselves to be drawn into these entangling alliances which slowly but surely distort our ethical outlook, weaken our influence with those who come to us for their professional training and finally lead us into partnership with forces that look upon this age-old service to mankind as merely the acquisition of loaves and fishes at the expense of the ignorant and gullible ill and near ill who come trustingly to us for aid and comfort and relief in the most troublous times of their lives.

MEDICAL PRACTICES OF THE NEW ENGLAND ABORIGINES.[1]

BY WILL T. BRADLEY.[2]

1. The New England Tribes.—Just before 1620 there were eight leading tribes or confederations of Indians living in New England. These included the Abnakis, whose villages extended down through Maine toward the mountains of New Hampshire; the Pennacooks, dominating southern New Hampshire and northeastern Massachusetts; the Massachusets, who inhabited chiefly the region about Boston Bay, but whose dominion went westward toward the Berkshires, perhaps as far as Deerfield; the Wampanoags, in southeastern Massachusetts, allied with the Nausets on the Cape; the Narragansets, whose country lay to the north and west of Narraganset Bay and included Block and several smaller islands and part of Long Island; the Mohicans, who had been driven eastward from the Hudson by the Mohawks of central New York, and whose leading members here were known as the Pequods, with headquarters at what was to be New London, Connecticut; the Wappingers, crowding along the shore of the Sound in southeastern Connecticut and part of New York; and finally, the Nipmucs, apparently the remnants of a once-powerful tribe, now scattered as tributaries of the Pennacooks,

[1] Abridged by the author from a paper read before the Section on Historical Pharmacy, A. PH. A., Portland meeting, 1935.

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Massachusets, Narragansets, and Pequods, in northern Rhode Island and Connecticut, central and western Massachusetts, and southern New Hampshire. Several of these tribes claimed a total population of thirty thousand, and each boasted some two to three thousand warriors.

They were all members of that considerable body of Indians, known as the Algonquian Stock, which shared a common language and which had united the eastern seaboard from Canada to Florida by a network of excellent trails. The ancestors of the Algonquian tribes had come out of the West, probably not many generations before, since their descendants vividly recalled the migration in song and legend.

Now, though related by blood and most certainly by language, the tribes in New England were by no means all alike in culture and tradition; but there were many traits common to the lot.

Briefly it may be said that the tribes to the north, especially the Abnakis, were most practiced in the arts: they were the only Indians in the whole region who had any sort of picture-writing, though even they had no conception of a written language; and they were skilled in weaving and painting. The southernmost tribes were more commercially minded and (a common relationship) more warlike; and since the waters of the Sound furnished the varieties of shell fish from which were made the white and blue wampum beads used by all the Indians for currency, the Narragansets and Pequods naturally became the mint-masters of the whole district, at great profit in skins, furs, and other commodities.

Each tribe had its Grand Sachem, and each community within a tribe had its Sagamore or leader. Chieftainships were sometimes hereditary; more often a leader was chosen by ordeal, with any brave man eligible for the test. A favorite method was to administer the rhizomes and roots of American Hellebore; the warrior whose stomach withstood its emetic action longest was judged to be fittest for leadership.

On the whole, the early settlers found the Indians to be human beings of primitive but far from savage culture, friendly and trustworthy, as well as trusting, until taught to hate the guile of the invaders who so openly despised them and so stupidly and arrogantly underestimated their maturity and pride. They were certainly superstitious—for what human race is not?—and no doubt deeply religious. In their practical affairs they were guided by a wealth of experience in their own kind of living which, when met on their own ground, put to shame the blundering theories of the white settlers.

It was not long before the Whites began asking the Redmen what animal and vegetable life was edible, what was not; which districts were healthful, which to be avoided; how to build canoes; how and where to hunt, fish, and construct camps to protect themselves from attack of beast and man; how to get conveniently about the country; and, most frequently, how in this new climate, with nothing better than fresh water to drink, to keep well.

That which the settlers learned from the untutored Indians, they earnestly reported to their scientific brethren in Europe.

2. The Health of the Aborigines.—Because of these early reports, we know more about Indian remedies than what they were used for: more about their medicine than their ailments. The reason is that Indian nomenclature for Indian diseases

was not accurately translated into our own medical terms, and consequently, though we know (say) that the Penobscots used Blackberry Root (*Rubus sp.*), Christmas Fern (*Polusticum acrostichoides* [Michx.] Schott.), Coral Root (*Corallorrhiza odontorhiza* Nutt.), Goose-Grass (*Galium Aparine* L.), Mayflower (*Epigæa repens* L.), and Rockbrake (*Polypodium vulgare* L.), we do not know what ache or pain called for the use of any of these.

The modern investigator must attempt to answer three sets of questions:

(1) What diseases did the Aborigines know?—how shall we distinguish between their original diseases and those contracted from intercourse with Europeans?

(2) What was the true nature of their medical practice?—was it a sound practice?—was it largely based on superstition?—how many medicines had they command of?—how were these prepared and administered?—were their properties definitely or only vaguely known to the Aborigines?

(3) How much of real value did they teach the Whites?

In searching out the answers to these questions, our eagerness must be restrained by a logical skepticism, and we must never overlook the certainty of frequent error in our sources; for we cannot escape three ironic conditions: (1) the Indians and the settlers never very well understood each other; (2) primitive sense of humor dealt freely in misdirection, bluff, exaggeration; (3) the settlers were conspicuously gullible and credulous.

Indian health was no doubt painted too attractively from the beginning. In 1629 William Wood came to New England, and when he returned home in 1633 he wrote a book called "New England's Prospect," in which, as a means of inducing Englishmen to go over and settle, he carefully described the bodily fitness of the natives. He insisted that

". . . the *Indians* be of lusty and healthfull bodies, not experimentally knowing the Catalogue of those health-wasting diseases which are incident to other Countries, as Feavers, Pleurisies, Callentures, Agues, Obstructions, Consumptions, Subfumigations, Convulsions, Apoplexies, Dropsies, Gouts, Stones, Tooth-aches, Pox, Measels or the like, but spinne out the threed of their dayes to a faire length, numbering three-score, foure-score, some a hundred yeares, before the worlds universall summoner cite them to the craving Grave. . . ."

In stature, Wood found that most of the Indians were

" . . . betweene five or six foote high, straight bodied, strongly composed, smooth skinned, merry countenanced, of complexion something more swarthy than *Spaniards*, black hair'd, high foreheaded, blacke ey'd, out-nosed, broad shouldred, brawny arm'd, long and slender handed, out brested, small wasted, lanke bellied, well thighed, flat kneed, handsome growne leggs, and small feete. . . . I have beene in many places, yet did I never see one that was borne either in redundance or defect a monster, or any that sicknesse had deformed, or casualitie made decrepit, saving one that had a bleared eye, and an other that had a wenne on his cheeke."

Another writer, with a great interest in natural history, John Josselyn, who traveled in New England in the 1630's and again in the 1660's, said of the Indians:

"The Men are somewhat Horse Fac'd, and generally Faucious, *i. e.*, without Beards; but the Women many of them have very good Features; seldome without a *Come to me*, or *Cos Amoris*, in their Countenance; all of them black Eyed, having even short Teeth, and very white; their Hair black, thick and long, broad Breasted; handsome streight Bodies, and slender, considering their constant loose habit [dress]: Their limbs cleanly, straight, and of a convenient stature, generally, as plump as Partridges, and saving here and there one, of a modest deportment."

Again, in 1774, Dr. Benjamin Rush, of Philadelphia, once celebrated as America's greatest physician (but whose fantastic theories have long since been outmoded), during a meeting of the American Philosophical Society, delivered an oration described as *An Enquiry into the Natural History of Medicine among the Indians in North-America*, in which he explained that the Indians

> " . . . multiply faster, and die in smaller proportion than civilized nations. . . . The Indians we are told were numerous in this country before the Europeans settled among them. Travelers agree likewise in describing numbers of both sexes, who exhibited all the marks of extreme old age. It is remarkable that age seldom impairs the faculties of their minds."

So runs the old story, closely echoed in one record after another. The settlers were convinced that the natives normally enjoyed marked good health—though seriously hurt by the diseases of the invaders.

And yet the fact remains that the Indians suffered and died from many things besides old age: cold, heat, famine, disease, poison, and accident; and it is no shrewd guess if we allow for a good number of cripples among them. Unless they be professional beggars, the chronic invalids among any people, the deformed, the decrepit, do not usually appear in public; small wonder that the early settlers, describing perhaps truthfully what they saw, should see only the most presentable and active specimens of the Indian race.

Still, the Indians appear to have been generally strong and healthy enough to cause envy in the white men. Their frequent forced exercise, their bodily exposure to fresh air and sunlight, their cleanliness (for the dirty Indian is probably a modern degenerate: there is plenty of evidence that the early Indians loved baths and swimming), their freedom from nervous stimulation, their abundant relaxation and sleep, could almost have forced good health upon them; and their contagious diseases seem to have been neither numerous nor, as a rule, deadly, until the settlers arrived, and the natives got their first taste of smallpox, measles, diphtheria, scarlet fever, yellow fever, venereal diseases, and many other serious infections.

Josselyn says that their commonest afflictions were

> " . . . pestilent Fevers, Plague, Black-pox, Consumption of the Lungs, Falling-sickness, Kings-evil, and the Disease called by the Spaniard the Plague in the back, with us Empyema;"

Dr. Rush discusses various kinds of fever, pleurisies, pneumonia, rheumatism, dysentery, animal and vegetable poisons, wounds, and fractures, and he claims (wrongly) that gout was rare, worms and tooth ailments unheard of. Such vague summations as these do not help us much.

It is from their remedies that we must make our soundest deductions. By surveying the medical practices of all the North American Indians, Dr. Heber Youngken managed to compile the animal, vegetable, and mineral drugs used in more than eighty ailments. From Doctor Youngken's lists and from the pages of many early records, we can find at least fifty ailments known to the Indians of New England.

A study of our lists shows clearly that, except for colds, some contagious skin diseases, and certain fevers (including malaria), the Indian ailments were largely organic, resulting, as much as anything, from improper nourishment and from accidental injury. Indian children frequently suffered from worms, toothaches, ear-

aches, and numerous stomach troubles common to all infants. Indian women had many female complaints, for which they knew a special set of medicines. The belief that the race was notably lethargic is well substantiated: they had only two or three sedatives (at least one of which was reserved for use by women only) as against some fifty stimulants and tonics.

All Indians had to fear burns, colic, constipation, deafness, debility, diarrhœa, dropsy, empyema, eye troubles, fevers, gland troubles, hemorrhages, malaria, mortification, various mouth ailments, nausea, neuralgia, nose ailments, miscellaneous aches and internal pains, piles, pulmonary troubles, rheumatism, sciatica, scrofula, scurvy, snake bites and other poisons, sprains, swellings, tooth ailments, tumors, urinary troubles, and (perhaps) some venereal diseases. But the greatest bulk of Indian remedies was for colds, wounds, skin ailments, stomach disorders, and female complaints.

3. Some Superstitious Practices.—It is commonly the custom to dismiss all Indian medicine as being based on superstition. Perhaps the fact that the practitioners were often also priests has told against them in the opinion of scientific investigators. But the New England Indians apparently had nothing like those formal, elaborately organized priesthoods of the West and South which dominate most discussions of Indian cults and superstitions.

In New England there was a representative batch of superstitious medicines. Bloodroot (*Sanquinaria canadensis* L.) was used not only as a red dye for skin, clothing, and weapons, but also as a love charm. Juniper (*Juniperus communis var. depressa* Pursh.) was regarded as "hot," and therefore useful in all manner of "cold" conditions. The broad teeth of moose fawns were hung about the necks of children when teething. Red Baneberry (*Actæa rubra* [Ait.] Willd.) was used for pains in the stomach, but given in certain seasons only to males, in other seasons only to females. The variety of shell-fish (*Buccinum undatum* L.) from which white wampum beads were made was thought to be effective against hemorrhage. On the theory that so pliable a creature must cure stiffness by sympathetic contact, the skin taken from a living snake was bound about a rheumatic limb. A live toad, sewn in a bag and worn over a painful area, was thought to have "inhaled" the pain by the time he stopped wriggling. Warriors believed that if they removed the heart from a live turtle and swallowed it raw while still throbbing they would come through battle unwounded. Old people would trade as much as a valued beaver skin for that of a black wolf, since they considered the wolf's skin, worn as a coat, a sure protection against aches.

But just how much credence the Indians gave to these things we ought not pretend to know. Primitive sense of humor tends to exaggerate them for the benefit of civilized investigators.

At all events, a dozen or so superstitious remedies and prophylactics found in New England (and doubtless some others not yet found) are few enough when we recall our own pet fetishes; and we must not make the absurd blunder of confusing a man's superstition (which marks him as being only human) with his science and common sense (which, if he has any, marks him apart from most men). There is no evidence that the Indians made any such confusion. In their medicine, as stated by Whitebread, they "used faculties as discriminating and arrived at results as important and correct as those achieved by other races in a higher state of cul-

tural advancement." When an Indian fell sick, his friends and relatives might trot out their snake skins or organize a dance of hope for his recovery, just as a very pious family to-day might hold prayers for a stricken member; but, like any sensible family to-day, they would call in the doctor; and the Indian doctor had more in his kit than a few charms and fetishes, more in his head than the hocus-pocus he mumbled to impress the village.

Doctor Youngken's lists indicate that for their eighty-odd ailments the Indians of North America knew over eight hundred specific remedies. In New England alone we can count upward of two hundred remedies. Nor should we ignore the fact that for every one we find there must have been many more, fully as useful to the Aborigines, which we shall never hear of.

4. *Medical Practice.*—In a sense, all the Indians practiced medicine. That is, they had certain cherished methods for safeguarding health (among which easily the most popular was the sweat bath: beginning in a sealed wigwam filled with hot stones and steaming kettles and ending in the cold waters of a nearby stream, a ritual in which one or many could participate). And when anyone cut his finger or felt a headache coming on, he knew just what to do about it.

Each community, however, told off at least one member to specialize in the arts of medicine and pharmacy and to learn, preserve, and pass down their scientific traditions. Some were believed born to the business; just how the birthright was detected is not clear. In most tribes, especially those of the West and South, all prayers, songs, exhortation, suggestion, ceremonies, fetiches, and some specifics and mechanical processes were limited to the priest-doctors, the official medicine men and medicine women, whose art was magic and who formed extensive secret societies, with anyone eligible to join who gave public evidence, after private instruction, of his skill and fitness. Here and there would appear self-appointed prophet-doctors, working alone and owing their "divine afflatus" to the thunder-god. Forming a third class, the herbalists, or lay doctors, many of whom were wise old women, were to to found everywhere, ready to combat the evil spirits of sickness with bleedings, operations, and medicines.

That the herbalist was perhaps the only doctor regularly practicing in New England is suggested by all available records. He was summoned for all serious cases, receiving payment in advance, unless he could trust the patient or his family —and receiving high payment: the best in wampum and in goods the patient had to offer. In hopeful cases, he resorted to his fund of medical knowledge; in hopeless cases, or when confronted by an ailment beyond his experience, he wisely turned to his God (nor should we sneer). When pressed, he would make a prognosis of the patient's recovery or death, sometimes consulting charms for information; in this he was rash, for it is said that a wrong prognosis meant the death of the doctor.

After diagnosing the ailment, he would prescribe the proper treatment and medicines—which were the cheapest part of his service, for his materials were free for the taking in the forest.

He knew how to deaden local pain with anesthetics and narcotics; how to combat poisons with antidotes and emetics; how to stop the flow of blood with styptics and prevent infection with antiseptics; how to combat diarrhœa with astringents, constipation with cathartics (both mild and drastic), enemas, and suppositories; how to soothe with emollients, lotions, plasters,

poultices, and salves and how to divert with liniments, counter-irritants, and moxas; when to scarify, when to puncture and bleed; when to use an inhalant, when a splint and bandage, when an injection (his syringe was constructed of an animal bladder and a hollow bone). Besides his scores of specific remedies, he had, as general medicines, carminatives, diaphoretics, diuretics, emmenagogues, expectorants, febrifuges, masticatories, parturients, prophylactics, sedatives, stimulants, stomachics, sympathetics, tonics, and vermifuges; he was even ready, upon occasion, to fill teeth. Of childbirth he may not have had any direct experience, since, as is well known, Indian women withdrew to bring forth their young, like animals, in solitary confinement.

He would usually compound his own medicines, though not necessarily, for every Indian seems to have been familiar with the native pharmacy. He would often linger to administer the dose and otherwise tend his patient. So the hard-working medicine man was at once physician, pharmacist, and nurse (if not likewise a priest). No wonder, then, that in many communities he held a commanding position, frequently second not even to the sagamore himself.

5. Pharmacy.—The pharmacy of the Aborigines consisted of a very few processes requiring no long schooling to master.

The Indian pharmacist had implements made of stone, wood, bone, and leather, designed for cutting, pounding, mixing, and boiling. The New England Indian had no metal tools, unless (which was rare) he managed to import them from the luckier craftsmen of the Middle West.

Easily the commonest of his preparations was the decoction; Doctor Youngken's lists call for some 230. His kettle was made of birch bark, or some other bark, and he would place it on coals, or hot ashes, or hot stones; but sometimes he would drop heated stones into the liquid to make it boil.

Infusions, too, he commonly prepared, and likewise ointments (mixing the medicinal ingredients with animal fat or seal oil), plasters and powders (crushing or pulverizing the raw materials between two stones). And he was cunning in the skill with which he extracted oil from acorns and other nuts, first making a strong lye from the ashes of rotten maple wood, then boiling the acorns until the oil swam to the surface, whence it could be skimmed off and stored in bladders.

Thus, simply, before the white men appeared, did the Indian compound the medicines which he had learned not from the theoretic pages of textbooks but rather by word and example directly from his immediate predecessors. In his experience they proved capable of dealing with the ailments his people knew. But the great blow was coming.

6. Conclusion.—During the years 1612 to 1619, smallpox and yellow fever came among the Indians of New England from the ships of English explorers. These strange diseases swept through the villages of all the tribes, killing, some say, nine out of every ten, and some say nineteen out of every twenty. After the worst of the attack was over, there were left of the Pennacooks a few hundred, of the Massachusets less than a thousand, of the Wampanoags still less, and of the Narragansets and Pequods perhaps a thousand each. These figures refer to total populations: men, women, and children; the fighting forces were reduced to a mere handful for each tribe. "So," wrote Governor John Winthrop in 1634 to his friend, Sir Nathaniel Rice in London, "the Lord hath cleared our title to what we possesse..."

Thus, the Pilgrims landed to find little or no Indian menace—little, in fact, that boisterous Myles Standish could not meet single-handed. In the course of the

next few decades (though struck heavily again by the plague in 1634) the surviving natives managed to regain something like their former courage and confidence, and to increase slightly in numbers; but until cheated and robbed and hounded by religious zealots, they were friendly with the whites, who, they thought, were responsible for milder winters: they helped the settlers get acclimated, gave them food when they lacked it, showed them, in their desperate want of doctors and pharmacists, how to heal themselves. And if there was much magic mixed with their medicine, the Puritans knew enough to take the medicine and let the magic go.

We have seen that Indian medicine as practiced by the herbalists had but a small proportion of superstition mixed with it, especially in northeastern America, where the progressive pioneer spirit of the Algonquian Stock had not yet the time to settle into the decadence of ritual and tradition found in the older Southwest; on the contrary, it was largely guided by principles which we may almost with justice call scientific.

Now, there is one significant thing about Indian remedies which should not be neglected: except for a mere half dozen special remedies and, of course, ointments and plasters involving a base as well as a therapeutic agent, the Indians always used a single, specific drug for a single ailment. Whether or not they had any influence, even indirect, on the development of medicine in Europe, they certainly set the colonists over here an impressive example in their use of simples; and it was during the century after the first settling that America began to lead the way in discarding the freakish polypharmacy which was our heritage from the ancient world and the Middle Ages.

It is true that the Indians may have had nothing whatever to do with this medical revolution; on the other hand, their practice may have suggested to the settlers and early American doctors and pharmacists the needlessness of demanding a dozen or a score of European ingredients, most of which were not at first to be had at any price, when one native ingredient would do the trick.

Records of an interchange of medical aid between the two races are of frequent occurrence; and typical is the contrast between the following treatments, mentioned by Josselyn:

> "I have helped several of the *Indians*," he says, "with a Drink made of two Gallons of *Molosses wort* (for in that part of the Country where I abode, we made out Beer of Molosses, Water, Bran, chips of *Sassafras* Root, and a little Wormwood, well boiled), into which I put of Oak of *Hierusalem*, Cat-mint, Sowthistle, of each one handful, of *Enula Campana* Root one Ounce, Liquorice scrap'd brused and cut in pieces, one Ounce, Sassafras Root cut into thin chips, one Ounce, Anny-seed and sweet Fennel-seed, of each one Spoonful bruised; boil these in a close Pot, upon a soft Fire to the consumption of one Gallon, then take it off, and strein it gently; you may if you will boil the streined liquor with Sugar to a Syrup, then when it is Cold, put it up into Glass Bottles, and take thereof three or four spoonfuls at a time, letting it run down your throat as leasurely as possibly you can; do thus in the morning, in the Afternoon, and at Night going to Bed."

But later he speaks of a fisherman, one Christopher Luxe, who had "burnt his Knee Pan" and was healed by an Indian wife: she stopped the pain by dropping on the sore a strong decoction of alder bark; then she made a plaster by boiling the dark of white pine until it was soft, stamping it between two stones until it was as thin as brown paper and of the same color, and incorporating it with seal's oil; this she applied warm to the burn.

But if the Indians had any real effect upon our medicine, our doctors were not apparently aware of it. In his Oration of 1774, Doctor Rush winds up with a general estimate: "We have no discoveries in the materia medica," he asserts,

> " . . . to hope for from the Indians in North America. It would be a reproach to our schools of physic, if modern physicians were not more successful than the Indians, even in the treatment of their own diseases."
>
> "Since the intercourse of the white people with the Indians, they have acquired several of our artificial methods of curing diseases, particularly the art of phlebotomy. What Indian remedies ever equalled the efficacy of bleeding . . . ?"

The answer lies in the fifty-six Indian drugs which Doctor Youngken lists as being still recognized either in the United States Pharmacopœia or in the National Formulary. Of these, the following thirty were used by the Indians of New England:

American Hellebore, Arbor Vitæ, Beth Root, Blackberry Root Bark, Black Snakeroot, Bloodroot, Blue Cohosh, Blue Flag, Boneset, Butternut Bark, Canada Snakeroot, Dogwood, Elder Flowers, Geranium, Lady's Slipper, Larch Agaric, Life-Root, Lobelia, May Apple, Pipsissewa, Pleurisy Root, Poke Berry, Scullcap, Spikenard, Turpentine, Verbena, White Oak Bark, Wild Black Cherry, Witch-hazel and Yellow Dock.

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DR. HUGH S. CUMMING RETIRES AS SURGEON GENERAL.

Surgeon General Hugh S. Cumming, who joined the Public Health Service in 1894 and became Surgeon General in 1920, retired February 1st.

Dr. Cumming's influence in the control and treatment of the Bubonic Plague and Yellow Fever has been world wide and he was active in promoting international sanitation treaties. The Surgeon General was tendered and received many decorations from various countries and under his direction the Public Health Service has grown to be a bureau of much influence. He was born in Hampden, Va., sixty-six years ago, and graduated from the University of Virginia Medical School in 1893.

It is stated that Dr. Thomas H. Parran, Jr., New York State Health Commissioner, will succeed Surgeon General Cumming; he is a native of Maryland and a graduate of Georgetown University.

Miss Anna M. Pabst, bacteriologist at the National Institute of Health, Washington, D. C., gave her life to science when she died in Emergency Hospital of a form of meningitis contracted while trying to develop a serum with which to combat the disease in others.

Miss Pabst, an experienced technician, was inoculating an animal with meningitis culture on December 17th, when the animal moved and some of the culture squirted into her eye. Though all possible immediate steps were taken to cleanse the eye from the deadly injection, Miss Pabst contracted the disease.

The Public Health Service, in reporting her death in line of duty, paid highest tribute to the scientific service of Miss Pabst. Hers is the sixth death in the past 10 years from diseases contracted in that laboratory by scientists. Many have suffered serious illnesses.

Miss Pabst came here from Brooklyn, N. Y., some years ago. She received her preliminary education in New York City and later received a master's degree in bacteriology at George Washington University, where at the time of her death she was working toward her doctor's degree in the same subject.

Col. Charles H. March, Litchfield, Minn., has been appointed to serve as chairman of the Federal Trade Commission for the fiscal year 1936, effective January 1st; he succeeds Commissioner Edwin L. Davis. This will be Colonel March's second term as chairman of the commission. He was appointed in 1929 for a term expiring September 25, 1935, and was reappointed by President Roosevelt last September for a full term of seven years, expiring in 1942.

SOUTHERN METHODIST LIBRARY BUILDING.

The $400,000.00 Fondren gift provides Southern Methodist University with a new library building. The *Dallas News* comments: Mr. and Mrs. W. W. Fondren, of Houston, already material benefactors of the local university, have made a splendid gift in the library building. It is to be hoped that the structure's plans avoid mistakes made elsewhere and provide adequate means for expansion as S. M. U. grows. Such a building becomes the foundation for future greatness in the field of higher education.

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

Commenting upon recent discussions, publications and proposed, as well as present legislation, pertaining to Fair Trade Practices, the writer believes that our "real" hope lies in national legislation.

This is the opportune time for the small business man to present his problem to the members of the Seventy-fifth Congress. The little fellow, up to this time, has been standing by waiting for "George to do it" instead of taking an active part in promoting matters that may help him and his business; and when things go wrong, he is the first to complain.

A program that will make the individual store owner fall in line with present proposed legislation would do much toward more favorable results. We all thought that Drug Institute would be the solution, but, no doubt, it failed because of lack of coöperation from retail druggists who needed help.

Since reading Mr. Olsen's article, the New York high court has ruled the Fair Trade Act of that state unconstitutional. Similar rulings can be expected in states where these acts already exist and in states where such bills are in progress.

Many manufacturers have found it difficult to enforce their minimum suggested resale prices, and in many communities the minimum resale price has become the regular retail price. Chiseling and the use of loss leaders has very often resulted in detrimental effects upon the manufacturer and wholesaler as well as the retailer.

In view of the many difficulties that are now confronting small businesses, and the difficulties that may arise from local and state legislation in which interstate traffic plays an important rôle, why not put a united effort behind National Fair Trade and Anti-Discrimination Legislation? Include all fields of distribution, so that the "opposition" cannot call it class-legislation. Our Social Security Program is designed to give relief to those in need, so why not present our problem to the administrators of this act?

Awaken the little fellow and line him up with his local, state and national organizations that have already started the ball rolling in a direction that should result in fair and honest business ethics.—H. W. HEINE.[1]

STATE FAIR TRADE ACTS.

BY PAUL C. OLSEN.[2]

State Fair Trade Acts which permit resale price agreements between owners of trade-marked merchandise and their wholesale and retail distributors now exist in ten states. These ten states contain nearly 25,000 of the 58,000 drug stores in the United States. The California law was passed in 1931, but in the other nine states the laws were enacted this year. These states are: Oregon, Washington, Iowa, Wisconsin, Illinois, New York, New Jersey, Pennsylvania and Maryland.

In attempting to effectuate these acts, a number of problems have arisen. The solution of these problems satisfactorily is difficult and complex in many cases. It is the purpose of this paper to enumerate some of the difficulties which have been encountered so far in efforts to make these laws accomplish the purposes for which they are intended. It is believed an understanding of these difficulties and problems may serve as some assistance in determining just what can be accomplished by these laws.

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1. The laws all authorize resale price agreements on trade-marked merchandise. The question has arisen of what is "trade-marked" merchandise. Trademarks are used for purposes of identification, but the identification in some cases extends to the manufacturer of the article, while in other cases it does not.

2. May the owner of trade-marked merchandise or the owner of the trademark, or both, enter into resale price agreements with their distributors? A possible condition such as this can arise. A manufacturer of trade-marked cigarettes may be unwilling to make resale agreements with his distributors. May a wholesaler who buys these cigarettes from this manufacturer make resale price agreements on these cigarettes with his retail customers?

3. The resale price agreements authorized under the state fair trade acts can, of course, apply only to intrastate commerce. Suppose a retailer or wholesaler buys some merchandise from within the state under a resale price agreement, and also buys identical merchandise outside the state, which of course puts this merchandise into interstate commerce. Is the resale price agreement binding on all this merchandise, or only on that part of it which is bought within the state?

The various fair trade acts attempt to cover this situation by providing that any sale within the state at a figure below the agreed resale price constitutes unfair trade. This provision, however, has not been acted upon as yet by any court of final jurisdiction.[1]

4. Indeed the whole question of the binding nature of resale price agreements upon persons who have not signed agreements is still in the courts of California. A Supreme Court decision from that state is expected momentarily.[1]

5. Are resale price agreements setting different minimum prices on the same products permissible? The general interpretation is that the lowest contracted resale price is the one which controls all resale prices. This means, of course, that uniform resale prices throughout an entire state are established.

It may be argued that these uniform prices are merely minimum resale prices, but the experience of California has been that the minimum resale price tends to become in all stores the prevailing price.

6. An important purpose of state fair trade acts has been to establish minimum resale prices which eliminate loss leader selling and its unfair and undesirable economic and social consequences. In California minimum resale prices on popular merchandise have been established in many cases at figures far below the traditional $33^1/_3$ per cent gross margin on the retail selling price, and these minimum resale prices have been accepted with enthusiasm in California according to trade reports from there.

In the other nine states, however, vigorous objection has been made to the establishment of minimum resale prices for retailers which allow to the drug trade less than the traditional $33^1/_3$ per cent margin on the selling price. The difficulties

[1] The New York Court of Appeals has since invalidated that part of the New York Fair Trade Act which would bind distributors not signing resale price contracts to maintain the resale prices specified in contracts. The effect of this decision is to permit resale price agreements within the state of New York between owners of trade-marked merchandise and the distributors of this merchandise, but not to make these resale prices binding on persons not signing resale price agreements.

in these states of manufacturers formulating contracts satisfactory to their retail distributors thus can be imagined.

7. Since the state fair trade acts can apply only to intrastate commerce, it follows that a manufacturer who desires to make contracts for resale prices with his wholesale and retail distributors must be domiciled in that state. This places a burden upon many manufacturers who do not maintain branch offices or warehouses in each of the ten states having fair trade acts. Indeed were they to domicile themselves in these ten states they would be burdened not only with the costs of maintaining branch offices in each state, but also would subject themselves in many of these states to local taxes of various types which they do not now have to pay. The problem will be further complicated, of course, as additional fair trade acts are enacted in other states. A fair trade act is now before the Alabama legislature and another is having the consideration of the Tennessee legislature. When the Ohio legislature meets in special session this fall, a fair trade act, it is expected, will be introduced there.

8. As a substitute for direct contracts between manufacturers and their wholesale and retail distributors, the so-called wholesalers' omnibus contract has been put in use in California and has been suggested in other states. While these contracts solve some of the difficulties, they still leave unsettled the question of whether or not wholesalers may include in their omnibus contracts merchandise on which manufacturers have indicated no desire for resale price agreements.

Also unsettled is the situation of the many wholesalers who do an interstate business.

I have raised these questions not because of any unfriendliness toward the purpose of fair trade acts, but simply because I believe in raising these questions so that a better understanding will be had of the difficulties which are inherent in effectuating the purpose of these laws.

As I have indicated above, selling merchandise at a loss for purposes of destroying competition and creating monopoly is undesirable, both from an economic and a social standpoint. Fair trade acts, capably and carefully administered, offer a means of progress toward this very desirable end—the elimination of unfair and predatory practices in wholesale and retail distribution.

Retailers should not forget that the responsibility for the success of state fair trade acts is largely theirs. It is manifestly impossible for a distant manufacturer or even for a wholesaler to detect violations of resale price agreements. The successful enforcement depends upon the attitude and action of retailers in their enforcement.

AMENDMENT OF SECTION 2 OF THE CLAYTON ACT.

Proposed changes by the Senate Judiciary Committee seek to amend Section 2 of the Clayton Act. The amendment deals with price discriminations and terms of sale. There is evident interest in measures which seek to make effective prevention of unfair price policies by national and state legislation and it is to be hoped that as a result of these discussions regulations will be formulated which will be fair and enforcible.

The proposed changes place important restrictions upon the extent to which savings made possible by large-scale purchasing can be passed on by the distributor to buyers. Furthermore, the Federal Trade Commission would be empowered to establish limits beyond which quantity prices could not be lowered.

PROCEEDINGS OF THE LOCAL BRANCHES

CHICAGO.

The 234th meeting of the Chicago Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held January 21st, at the University of Illinois College of Pharmacy. The meeting was called to order by President Morrison.

As this meeting closed the thirtieth successful year of the Branch the order of business was a report of the secretary on the financial condition of the Branch and the recommendations of the nominating committee for officers for the coming year.

The secretary's report was voted as accepted and it was voted that a unanimous ballot be cast for the officers presented by the nominating committee. Dr. Lanwermeyer escorted the newly elected officers to the chair.

The speaker for the February meeting was announced as Dr. Ralston of Detroit, who discussed "Hormones or Endocrines."

Prof. E. N. Gathercoal, Chairman of the Revision Committee of the National Formulary VI, was introduced as the speaker of the evening.

The title of the discussion was "New Things in the National Formulary VI and United States Pharmacopœia XI." The following is a summary of the discussion.

A brief review was given of the "Principles of Revision" of the U. S. P. and N. F.

The basis of admission to the U. S. P. is, the best drugs or medicines of known therapeutic value that are being used at the time of revision, while the basis for admission to the N. F. is extent of usage, regardless of the consensus of the best thought of the medical profession as to therapeutic value.

Professor Gathercoal pointed out that the two official books were serving definite fields and that one book should not be looked upon as a supplement to the other.

To gain a clear idea as to what drugs and preparations should be given a place in the N. F. careful consideration was given to the facts obtained from three surveys. These surveys included (1) drug stores, (2) new things druggists thought might be included, (3) the reading of prescriptions to find out what doctors were prescribing.

Two rules were established (1) that the drug or preparation must be used in 20% of the drug stores (2) that they must be used once in every ten thousand prescriptions.

The U. S. P. XI includes the addition of ten biologicals. Destearinated Cod Liver Oil, Solution of Ergosterol, while not admitted, a lengthy discussion has taken place on Vitamins B and C and these substances are still being studied by the committee.

Liver Extract, the solution and the purified solution for hypodermic use, were included as well as Parathyroid and Dried Stomach.

No crude vegetable drugs were added to the U. S. P. while six were added to the N. F.

Among the N. F. inclusions are Psyllium Seed, Chimaphila and Areca, for veterinary purposes, Calamus and Sage. The latter two were included solely on usage.

There were about twenty chemicals added to the U. S. P. Some of the most outstanding ones are: Sodium Perborate, Calcium Gluconate, green Iron and Ammonium Citrate and Histamine Phosphate. The solution of the last mentioned chemical is used mainly as a diagnostic test for gastric acid secretion. Two ethers are now official in the U. S. P., one for pharmaceutical purposes and one for anesthesia.

The N. F. has added several chemicals. In order to do this a radical change in scope had to be made.

The policy of the N. F. has been to include only formulas and simples that entered into these formulas. Now simples are added regardless of their usage in preparations. Chlorothymol has been added as it now enters Liquor Antisepticus. This addition to the well-known preparation has been made in order to give it a higher antiseptic value. It should be noticed that Liquor Antisepticus is now an assay preparation. Its assay is based on the length of time that it takes to kill *Staphylococcus aureus*. Other chemicals added to the N. F. are Gentian Violet, Potassium Guaiacol Sulphonate, the Phosphates of Iron, Quinine and Strychnine, Scarlet Red, Potassium and Sodium Thiocyanate.

Preparations added to the U. S. P. are: Emulsion of Liquid Petrolatum, Mild Tincture of

Iodine, Iodized Oil, small Tablets of Bichloride of Mercury, Diluted Erythrityl Tetranitrate and Solution of Histamine Phosphate.

Some of the outstanding preparations added to the N. F. are Elixir of Aminopyrin, Elixir of Barbital, Elixir of Phenobarbital, Elixir of Sodium Thiocyanate, Aqueous Elixir and Iso-Alcoholic Elixir.

The Iso-Alcoholic Elixir consists of two elixirs that can be mixed in such proportions as to give a desired alcoholic strength. This elixir can be used advantageously as a vehicle or diluent for high alcoholic Fluidextracts or Tinctures and as a solvent for simples insoluble in alcohol and soluble in water or vice versa.

Professor Gathercoal prepared a very extensive outline showing a comparison of the N. F. V and VI as regards the number of items in each class, N. F. V items not admitted to N. F. VI, new admissions to the N. F. VI, occurrences per 10,000 prescriptions and loss and gain per 10,000 prescriptions by the revision.

The outline also shows the percentage of use in prescriptions of U. S. P. items, N. F. items, unofficial items and proprietary items. This outline may be had by writing to Professor Gathercoal or the Secretary of the Branch, L. Templeton, 715 S. Wood St., Chicago, Ill.

At the conclusion of the discussion, halted only by the lateness of the hour, a lively discussion followed, with many questions being asked regarding the new preparations.

All of the new preparations were exhibited and small wooden spoons were furnished so that the preparations could be tasted. Much favorable comment was elicited on the revised formula for Syrup of Glycyrrhiza.

Many timely remarks were made by Messrs. Fantus, Sisson, Gray, Becker, Lanwermeyer, Nelson and many others whose names do not appear.

It is suggested by the secretary that those further interested in any of the additions or changes of the two books confer with Professor Gathercoal, 715 S. Wood St., Chicago, Ill.

L. TEMPLETON, *Secretary-Treasurer.*

COMPARISON OF N. F. V AND N. F. VI AS REGARDS:

	No. of Items in Each Class in			N. F. V Items Not Admitted	New Admissions	Occurrences per 10,000 Prescriptions.			
	N. F. I.	N. F. V.	N. F. VI.	to N. F. VI.	to N. F. VI.	Total N. F. V.	Total N. F. VI.	Loss.	Gain.
Crude drugs	0	142	110	58	26	9.65	16.76	0.81	7.92
Animal drugs	0	5	10	1	6	0.00	94.90	0.00	94.90
Chemicals	0	67	95	18	46	120.62	896.71	8.22	784.31
Total simples	0	214	215	77	78	130.27	1008.37	9.03	887.13
Elixirs	86	66	54	21	7 + 2*	743.15	905.55	3.45	165.85
Liquors	41	37	32	17	12	128.19	225.97	2.02	99.80
Spirits	12	11	10	1	0	42.40	42.40	0.00	0.00
Syrups	35	38	25	21	8	159.06	251.45	0.81	93.20
Waters	3	2	5	0	3	12.46	16.96	0.00	4.50
Total solution preparations	177	154	126	60	30 + 2*	1085.26	1442.33	6.28	363.35
Extracts	2	14	14	7	7	28.30	90.02	2.38	64.10
Fluidextracts	52	105	72	44	11	36.28	57.31	1.47	22.50
Fluidglycerates	0	6	1	5	0	0.00	0.00	0.00	0.00
Infusions	2	4	3	2	1	5.40	14.20	0.00	8.80
Oleoresins	0	1	3	0	2	0.00	0.58	0.00	0.58
Resins	0	0	2	0	2	0.00	0.08	0.00	0.08
Tinctures	33	56	47	18	9	100.59	134.66	4.23	38.30
Vinegars	1	1	0	1	0	0.00	0.00	0.00	0.00
Wines	12	0	0	0	0	0.00	0.00	0.00	0.00
Total extractive preparations	102	187	142	77	32	170.57	296.85	8.08	134.36

Oleosaccharates	1	1	1	0	0	3.80	3.80	0.00	0.00
Pills	22	24	13	14	3	2.93	5.60	0.48	3.15
Powders	15	13	7	8	2	17.88	20.50	0.08	2.70
Salts	10	10	10	0	0	2.43	2.43	0.00	0.00
Tablets	0	8	48	5	45	10.44	565.52	1.28	556.36
Troches	0	2	1	1	0	0.00	0.00	0.00	0.00
Total solid preparations for internal use	48	58	80	28	50	37.48	597.85	1.84	562.21
Cerates	1	3	2	1	0	1.18	1.10	0.08	0.00
Collodions	4	3	2	1	0	0.08	0.08	0.00	0.00
Dressings	0	1	1	0	0	0.00	0.00	0.00	0.00
Glycerogelatins	0	5	1	4	0	0.00	0.00	0.00	0.00
Liniments	8	10	9	2	1	7.03	7.45	0.08	0.50
Lotions	4	7	6	2	1	54.93	56.20	0.33	1.60
Mulls	0	5	0	5	0	0.00	0.00	0.00	0.00
Oleates	4	2	0	2	0	0.00	0.00	0.00	0.00
Pastes	0	8	8	4	4	28.40	28.73	0.00	0.33
Petroxolins	0	18	3	15	0	1.34	1.18	0.16	0.00
Plasters	3	2	1	2	1	0.08	0.70	0.08	0.70
Ointments	5	19	21	3	4 + 1*	14.34	36.04	0.00	21.70
Total preparations for external use	29	83	54	41	11 + 1*	107.38	131.48	0.73	24.83
Acids	2	2	2	0	0	6.00	6.00	0.00	0.00
Ampuls	0	8	29	0	21	1.41	2.07	0.00	0.66
Confections	0	2	0	2	0	0.66	0.00	0.66	0.00
Emulsions	11	6	4	3	1	3.54	3.46	0.16	0.08
Gargles	0	1	1	1	1	0.00	0.00	0.00	0.00
Gelata (jellies)	1	0	1	0	1	0.00	5.90	0.00	5.90
Glycerites	7	5	6	1	2	0.41	0.66	0.00	0.25
Mels	0	2	1	1	0	0.08	0.08	0.00	0.00
Mixtures	19	13	4	7 + 2*	0	75.33	71.25	4.08	0.00
Mucilages	3	2	1	1	0	0.08	0.08	0.00	0.00
Nebula (sprays)	0	5	4	3	2	0.08	80.88	0.00	80.80
Oils (preparations)	3	6	4	2	0	0.70	0.00	0.70	0.00
Species (teas)	3	3	0	3	0	0.08	0.00	0.08	0.00
Suppositories	0	1	1	0	0	0.40	0.40	0.00	0.00
Other miscellaneous	27	27	14	15 + 1*	3	34.04	58.96	0.08	25.00
Total miscellaneous preparations	76	83	72	39 + 3*	31	122.81	229.74	5.76	112.69
Total preparations	432	565	474	245 + 3*	154 + 3*	1523.50	2698.25	22.69	1197.44
Total monographs	432	779	689	322 + 3*	232 + 3*	1653.77	3706.62	31.72	2084.57

* Titles have been changed so that the items are in other groups, but these are not new preparations.

OCCURRENCES IN PRESCRIPTIONS.

	U. S. P. VI 1886.	U. S. P. X, N. F. V 1931.	U. S. P. XI, N. F. VI 1936.*
U. S. P. items	88.2%	65.19%	63%
N. F. items	....	7.92%	17%
Official items	82.2%	73.11%	80%
Unofficial items	9.2%	10.84%	4%
Proprietary items	2.6%	16.05%	16%
	94.0%	100.00%	100%

* Based on the 1931 prescription ingredient survey, but only approximate figures.

AMERICAN PHARMACEUTICAL ASSOCIATION, CHICAGO BRANCH.

The following is a list of the officers for the Chicago Branch elected at the last meeting: *President*, S. W. Morrison; *1st Vice-President*, H. M. Emig; *2nd Vice-President*, R. A. G. Linke; *3rd Vice-President*, O. U. Sisson: *Secretary-Treasurer*, L. Templeton; *Delegate to the House of Delegates*, L. Templeton. Committee Chairmen: *Membership*, Thos. E. Rylands; *Legislation*, J. Reimenschneider; *Practice*, I. A. Becker; *Medical Relations*, Dr. Bernard Fantus; *Publicity*, A. E. Ormes.

LAWRENCE TEMPLETON, *Secretary-Treasurer.*

NEW YORK.

The January meeting of the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held in Columbia University, College of Pharmacy, on January 13, 1936.

About one hundred members and their guests attended.

The meeting was called to order by President Ballard. The secretary read the minutes of the previous meeting. These were approved as read. The report of the treasurer, Mr. Currens, was submitted by letter.

Chairman Lehman, of the Nominating Committee, then reported as follows: *President*, Frederick C. A. Schaefer; *Vice-President*, Otto F. A. Canis; *Secretary*, Horace T. F. Givens; *Treasurer*, Turner F. Currens; Chairmen of Committees: *Education and Legislation*, Robert S. Lehman; *Progress of Pharmacy*, Leonard W. Steiger; *Professional Relations*, James H. Kidder; *Audit*, Ernst A. Bilhuber; *Membership*, Rudolf O. Hauck. *Secretary of the Remington Honor Medal Committee* and *Delegate to the House of Delegates*, Hugo H. Schaefer. *Delegates to the N. Y. Pharmaceutical Council*, Samuel C. Henry, Frederick C. A. Schaefer. *Alternate Delegates to the N. Y. Pharmaceutical Council*, Jacob Seley, John J. Corcoran.

Chairman Ligorio of the Membership Committee, reported as follows:

"This committee has busied itself during the past year with increasing the membership of the Local Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION and that of the mother organization.

"In all 14 new members have been added to the list, ten of which joined the A. PH. A. and four the Local Branch.

"A series of circumstances prevented the chairman from performing his duties during the entire year. The credit, therefore, belongs to those loyal colleagues who are ever on the alert and who never cease preaching the gospel of organization work.

"In commenting upon the subject of membership, it would seem that time is ripe for certain changes to be recommended. The entire subject should be studied thoroughly and should be made as Mr. Ziefle, Chairman of the Membership Committee of the A. PH. A. has pointed out, a major part of the ASSOCIATION'S activities. It should be followed as a well-organized and systematic effort on the part of the ASSOCIATION itself, from the President down, rather than as a mere committee routine.

"Through judicious and well-correlated activities, every pharmacist in the country should be made to realize that membership in the A. PH. A. and local Branches is synonymous with high

professional standing. The work of the American Chemical Society is a worthy example of such activities. In a very few years they have made the chemists of the country organization-conscious, even to the point that large chemical and chemical engineering organizations do not employ men who are not members of the A. C. S.

"A second suggestion is, that in some way membership in the Local Branch should be automatic upon joining the National Association, the question of refunds to the Local Branch to be worked out in time. This would eliminate the objection of talking A. PH. A. at one time and later Local Branch."

Chairman Kidder, of the Professional Relations Committee, reported that he had noted in professional papers comments on increased relations between doctors and pharmacists, and that the new U. S. P. will serve as a major weapon in bringing the physicians to write U. S. P. and N. F. prescriptions.

Chairman Lehman, of the Committee on Education and Legislation, presented the following report:

"Last report on the Copeland Bill, S. 5, indicates that the House Committee on Interstate and Foreign Commerce will meet shortly to consider the measure.

"Senator Van Nuys, of Indiana, expects to introduce an Interstate Commerce Bill, which will modify the law considerably and will permit those engaged in interstate commerce to make price maintenance contracts where they are permitted under the state law.

"The Patman anti-discrimination bill demanding equal prices for all distributors is also being pushed.

"Tincture of Ginger U. S. P. is still classified as an intoxicating liquor and may only be sold when meeting the requirements surrounding the sale of liquor. It may not be prepared by a pharmacist; the bottle must bear internal revenue stamps.

"*Pay Roll Tax.*—A treasury decision recently issued requires that an employer must keep such permanent records of remuneration as paid to his employees, even though he does not come under the provisions of the law, *i. e.*, if he has less than the minimum number of employees. Exemptions include the services of children under the age of 21 years in the employ of their parents, husband or wife in the service of either, also domestic servants.

"A congressional committee is inquiring into the American Retail Federation. Hearings were resumed on Dec. 30th, when Representatives Patman and Lucas interrogated several of the Department store and Chain organizations.

"A federal business census began on January 2nd, and pharmacists may expect to be visited shortly by representatives of the Census Bureau. It is to be hoped that the information obtained may be used to further beneficial legislation.

"The Court of Appeals of the State of New York has invalidated the Section 2 of the N. Y. State Fair Trade Law, by declaring that section as unconstitutional. That is the section binding non-signatories to the terms of the contracts entered into by the manufacturers and retailers. The court does not forbid the right of a manufacturer to enter into resale price contracts with wholesalers and retailers. The right of a manufacturer to adopt a refusal policy is upheld. So, although the law is weakened, it will be a powerful protection in the hands of sincere manufacturers to the distributors.

"The Drug Institute finally disbanded; it is very much to be regretted that the considerable sum which was raised could not have been used for the improvement of conditions."

Samuel Henry, delegate to the New York Pharmaceutical Council, reported that he had attended all meetings of the Council and expected to continue to do so and that he had at all times maintained the dignity of the New York Branch. He wished the members to know that the Council is doing some very fine work.

Under the heading of old business, Dr. Ballard reported that he had replied to Professor A. Ziefle stating that the New York Branch is in accord with his program and that for over twenty-five years we have maintained an active and strong branch with meetings well attended, enclosing a list of programs for the past half year.

Dr. Fischelis, as a member of the Council, reported that the Council had the matter of remitting dues for Branch members under advisement.

Dr Ballard turned to nominations for officers and requested further nominations. Dr. Fischelis moved that the nominations be closed and the committee report be accepted; seconded

by Dr. Arny and carried. The new officers were elected by unanimous vote and Dr. Ballard called the new president, Frederick C. A. Schaefer, to the chair, and introduced the newly elected officers to the meeting.

Chairman Steiger, of the Committee on the Progress of Pharmacy, reported:

"The following review of important advances during the year 1935 in sciences related to Pharmacy, are from *Science News Letter, Industrial and Engineering Chemistry* and the *News Edition* of the latter journal. *Medical Sciences* (*Science News Letter* 12/21/35): The virus, that causes the plant disease, tobacco mosaic, was isolated by Dr. W. M. Stanley, Rockefeller Institute, Princeton, N. J., as a crystalline protein.

"Identification of the virus of human influenza and its cultivation outside the body were reported by Drs. Thomas Francis, Jr., and T. P. Magill, of the Rockefeller Institute.

"First definite evidence of a vitamin participating directly in a physiological process was found by Dr. George Wald, Harvard University, who found vitamin A in the eye's retina, and active in vision.

"Relief and apparent cure of a fatal type of high blood pressure by surgical operation was reported by a number of surgeons, working independently and using different surgical techniques, among them Dr. Alfred W. Adson, Mayo Clinic; Dr. Max M. Peet, University of Michigan Medical School; Dr. Irvine H. Page, Hospital of Rockefeller Institute for Medical Research; and Dr. George J. Heuer, New York Hospital.

"A substance that can be applied to the outside of teeth to relieve pain during drilling and other dental procedures was announced by Dr. L. L. Hartman, Columbia University.

"Heart muscle tone is the chief factor influencing the blood flow through the heart's arteries and should be considered in prescribing drugs for heart disease due to occlusion of these arteries, Dr. William B. Kountz, Washington University School of Medicine, reported.

Choline, produced by the pancreas, is a vitamin essential for liver function and probably an important factor in control of diabetes, Dr. C. H. Best, co-discoverer of insulin, and Dr. M. Hershey and Miss M. E. Huntsman, all of the University of Toronto, found.

"A new hormone, enterogastrone, produced by the upper intestinal walls, which may aid treatment of stomach ulcer because it inhibits stomach activity, was announced by Prof. A. C. Ivy, Northwestern University Medical School.

"Synthetic production of male sex hormones was reported by Dr. L. Ruzica, Zurich, Switzerland.

"Evidence presented by Dr. L. G. Rowntree and colleagues indicates that extract of pineal gland causes precocity of sexual development and premature cessation of body growth.

"A slight drop in the cancer death rate appeared in life insurance statistics for the first nine months of 1935.

"Length of life can be predicted by measuring change of the eye lens' power of accommodation, early presbyopia indicating probability of a shorter than average life, Dr. Felix Bernstein, Columbia University, found from research on thousands of individuals in Germany.

"Important aid for the treatment of liver disease and for preparing patients suffering from fatty livers for operation was the discovery by Drs. J. L. Bollmand and F. C. Mann, Mayo Clinic, that the composition of the liver can be varied within wide limits by diet.

"Cause of the paralytic disease, multiple sclerosis, may be clotting of blood in the small veins of the brain, possibly as a result of infection, researches by Drs. Philip Solomon, Mary E. Dailey and Tracy J. Putnam, Harvard Medical School, indicated.

"Putting a specially prepared fat or olive oil mixture into the veins is a new method developed by Drs. L. Emmett Holt, Jr., Herbert C. Tidwell and T. F. McNair Scott, Johns Hopkins Hospital, for treating babies suffering from severe nutritional disorders.

"A new function of the pituitary gland, control of the reticulo-endothelial system, which is concerned with production of new blood cells and destruction of old ones, was indicated in experiments of Prof. E. C. Dodds, Courtauld Institute of Biochemistry, and Dr. R. L. Noble, London.

"Vitamins (*Ind. Eng. Chem.*, Jan. 1936): In the field of foodstuffs the most important advances of the year have been in the commercial materialization of researches on the vitamins. Vitamins C and B_1 are now available on the market in crystalline form, a tremendous advance over previous concentrates. Vitamin C has been synthesized from sorbitol (derived from dextrose) through sorbose and is available in quantities to meet all demands. Other processes of synthesis

have also been applied to yield ascorbic acid (vitamin C) commercially, but the method based on sorbitol has so far given easier and cheaper production in larger quantities. Vitamin B_1 in crystalline form has been commercially obtained from rice polishings by a long and careful process of concentration which yields only about 3 to 5 Gm. of crystals from a ton of raw material. Needless to add, the extraction of so delicate an organic compound is an achievement of the highest order and, despite the tiny quantities entitled to be called commercial, opens up the possibility of successful synthesis later.

"Much accumulated information regarding the vitamins and hormones has during the year forecast their possible production through synthetic methods in the near future. The structure of vitamin B_1 was determined and announced early in 1935 as a result of its isolation in crystalline form, but as yet a complete synthesis has not been developed.

"Investigations of Reasons for Remarkable Healing Effects of Blowfly Maggots (*News Edition*, 12/20/35). One of the objects of the work with blowfly maggots, which are being used extensively by surgeons in the treatment of infected bones or wounds, has been to determine how the maggots produce their remarkable healing effects. In addition to removing diseased tissues it has been found that the maggots excrete certain substances into the wound and that one of these, allantoin, stimulates healing. Allantoin is available commercially and is now being used by doctors with gratifying results.

"Another substance excreted by the maggots has been found, though not yet identified, which in laboratory tests killed certain disease-causing bacteria in 5 to 15 minutes without injuring human tissues.

"Medicine (*Ind. Eng. Chem.*, Jan. 1936). In medicine important new developments in addition to the vitamins which play so large and growing a part in modern healing have received special attention. A new method of immunizing against tetanus avoids the danger of serum sickness from the antitoxin and a new sulphohydryl compound, thioglycerol, promotes the healing of obstinate wounds and sores. Somewhat related to medicine, but more especially to physics, has been the discovery not yet fully worked out, for application, of a method of imparting radioactivity of relatively short life to sodium compounds. The effect of this technique for the artificial production of radioactivity through electrical bombardment is likely to be far-reaching in many fields as details are developed."

President Schaefer then introduced Chairman E. Fullerton Cook, *Chairman* of the U. S. P. Revision Committee, the guest speaker of the evening, who discussed the U. S. P. XI. The complete text of his address follows:

"An Efficient Medicine for Every Therapeutic Need. About a generation ago a new therapeutic era was ushered in under the stimulus of a group of earnest clinicians and pharmacologists who were greatly influenced by the relatively new evidences of drug action or inaction, through animal experimentation.

"By some critics this group was termed 'therapeutic nihilists' since they questioned the value of most drugs in the prevention or treatment of disease. One prominent clinician believed that only about a half dozen drugs were worthy of consideration since their physiologic activity could be demonstrated chemically or biologically.

"Under the brilliant and able leadership of Dr. Osler the chairs of therapeutics were driven from most of the medical colleges and it has taken years to return to a reasonable and sound restoration of this important branch of medicine.

"This process was revolutionary in nature and like all revolutions the proponents swung far to the left, questioning all traditions and impericisms. Again history repeats itself and medicine is rediscovering the importance for 'therapeutics' but basing this acceptance upon clinical evidence and scientific proof.

"Tremendous advances have been made in the efficiency and specific character of many medicines during this period, and the thousands of trained investigations in colleges and universities, in heavily endowed medical research institutions in the research laboratories of a few of our pharmaceutical and chemical manufacturing firms, give much promise for the future.

"During this revolutionary period the Pharmacopœia has kept pace with every development and the Eleventh Revision represents the clear cut policy of its founder, Dr. Spalding, who, in 1820, stated that a Pharmacopœia to properly function must recognize the important medicines of its day. Unfortunately a few important medicines are excluded from the U. S. P. XI by the

unwillingness of patentees to have their products included. Insulin and pentabarbital are in this group. It has been the policy of the present Committee of Revision to include a medicine for every therapeutic need when such is available.

"The New National Formulary contains preparations and standards for a number of these U. S. P. medicinal substances, especially as tablets or in parenteral solutions, or in nasal and throat preparations and elixirs.

"The U. S. P. has taken the theoretical position that it should supply efficient therapeutic agents in such simple form that the physician could combine them in an original prescription to meet the needs of each patient.

"In practice, however, the physician often finds it advantageous to use a form of combination prepared by skilled pharmacists, preparations having the correct proportion of medication and suitably flavored. For all such needs there should be an official preparation either in the U. S. P. or N. F. and the new revisions of both books are approaching this ideal.

"*Medicines of Superior and Uniform Quality and Potency.*—The letters 'U. S. P.' on a label should mean to physicians, pharmacists and the public a superior quality, one adequate for every therapeutic need. An honest effort has been made to fix the standards of the Pharmacopœia so that a maximum of efficiency will always be obtained yet without the unnecessary cost due to the exclusion of the last traces of harmless foreign substances.

Furthermore a reasonable range must be permitted in U. S. P. standards to allow for the slight differences in analytical results obtained by even well-trained chemists and also because some deterioration is likely to occur even under the best storage conditions.

"*Scientifically Correct and Usable Titles.*—Some official titles have been criticized because of their cumbersome character and it must be admitted that it is difficult to learn and even to pronounce such titles as Erythrityl Tetranitrato but this is scientifically correct and has already been adopted by the British Pharmacopœia, and thus adds to the U. S. P. and B. P. uniformity. This has been a mutual policy for ten years.

"In practice the Pharmacopœia has provided official abbreviations and often synonyms for use by physicians in prescribing, and there are advantages in the use of these which many physicians are recognizing When titles are too short, euphonious and catchy, especially when they call for trade-marked and packaged medicines, the patient usually reads the prescription, buys it at a cut price store, and then, if it has been efficient, recommends it to friends. This is not usually in the best interest of the health of the patients or the friends who thereafter are likely to dose themselves with that medicine indefinitely and unwisely. Physicians should learn and use official abbreviations when ordering medicines.

"*Efficient and Useful Vehicles.*—A wide variety of pleasantly flavored vehicles with different solvent properties are provided in the U. S. P. and N. F. Pharmacists should carry samples of these to physician friends and demonstrate their application. The various ointment vehicles and their specific uses should also be explained.

"*Research by Outstanding Scientists, Both National and International.*—The independent and scientific position of the U. S. Pharmacopœia has always enabled it to command the coöperation of scientific workers throughout the country.

"This feature has been greatly intensified during the past five years and the program now under way offers opportunities and insures results of far-reaching importance. Happily much of this is assuming international importance through the participation of the pharmacopœial commissions of other nations. Studies now under way deal with vitamins and anti-anemia products, these two being under the direction of special Pharmacopœial Advisory Boards consisting of internationally known experts.

"Another study deals with digitalis. This will be by clinicians and biological experts and will continue for several years. The help of the British Pharmacopœial Committee, the Swiss Pharmacopœial Commission and the Canadian experts is assured. Other studies dealing with pepsin standards and assay aconite and ergot assays, soaps and antiseptic solutions, ointment vehicles, the extraction of drugs and the preservation of drugs and chemicals are among the researches under way.

"Undelayed Revision of Standards by Interim, Revision, Whenever Necessitated by Scientific Advance: Although authorized by the Pharmacopœial Conventions since 1900, the Committee of Revision rarely took advantage of the opportunity to revise the official standards

between revisions. The wisdom and actual necessity for such revisions was faced by the Committee several years ago and promptly accepted as an essential policy for a Pharmacopœia which was to meet the needs of to-day with its rapidly developing sciences. Four such 'Interim Revisions' were released from 1933 to 1935, providing new standards for Cod Liver Oil, Ergot, Lactose, Oil of Lemon, Magnesia Magma, Bichloride Tablets and Non-destearinated Cod Liver Oil.

"This policy has fully demonstrated its importance and with many new researches now actively in progress under Pharmacopœial supervision, with new facts being announced almost daily by the investigators in these related medical sciences, and with valuable new therapeutical agents being developed, the Pharmacopœia must of necessity adopt the plan of interim revision announcements. It is hoped that official announcements may be made from time to time as revisions or additions are decided by the Committee but that the printed text may take the form of an 'Annual Supplement to the Pharmacopœia,' appearing on January first of each year.

"This plan would largely overcome the difficulty of securing publicity to changes, for the users of the Pharmacopœia would soon learn to expect a supplement yearly and would naturally consult the original Pharmacopœia and all of its supplements to determine the actual standards in force.

"*Prompt Recognition of New Medicinal Agents Whenever Their Merit Has Been Proven.*—The U. S. P. Convention also authorizes the acceptance of additions to the Pharmacopœia whenever, in the opinion of the Committee, the value of a new remedy justified such recognition.

"It is not expected that this permission will be taken advantage of very frequently for a medicinal product is not admitted to the Pharmacopœia until its importance has been widely recognized by the medical profession.

"Products such as Insulin, unavailable until 1942 because of patent control, will undoubtedly be admitted as soon as the patent expires.

"A serious problem for future Pharmacopœial Committees will be the complications arising from the increasing tendency for universities and manufacturing firms to patent or trade-mark new medicinal products.

"The policy followed by the Committee up to this time has been the inclusion of meritorious new therapeutic agents of the patented or trade-marked class, only when the consent of the patentee or controlling factor had been obtained. When a product was controlled by and its distribution limited to one firm, even though consent to include in the U. S. P. had been granted it was believed unwise to admit such substances.

"This situation must be restudied and, if possible, some way devised whereby essential new medicines may receive Pharmacopœial recognition even though patented, otherwise the basic principle of the Pharmacopœia cannot be maintained namely that 'it shall include the important therapeutic medicines of its day.'

"It was never intended that the inclusion of a product in the U. S. P. should in any way alter the legal rights granted an owner under patent or trade-mark laws.

"*An Organized Program for Extending Reliable Information to the Medical Profession Concerning the Use of Official Medicines:*

"(*a*) *Articles by Eminent Clinicians Suggesting Treatment for Specific Diseases.*—Through coöperation with the officials of the American Medical Association, one article of a series of twenty-four, will appear every two weeks for a year in the *Journal of the A. M. A.* These will deal with the use of the official medicines in the treatment of disease and will be written by leading medical men specially qualified for the presentation of each subject. The series will be subsequently published in one volume for the information of medical students, medical and surgical interns, and for physicians in practice.

"Special Articles will be presented on prescription writing and the use of official vehicles and typical prescriptions will be included.

"(*b*) *Suggestions and Helps for Hospital Pharmacists and Pharmacists in General Practice in Extending Information to Physicians Concerning the Use of Official Medicines.*—A corresponding series of 24 articles will appear in pharmaceutical journals some weeks prior to the medical articles so that pharmacists and pharmaceutical manufacturers may emphasize to physicians the official products to be discussed and recommended in the forthcoming *A. M. A. Journal* articles. Pharmacists could even fill some of the typical prescriptions and show them to physician friends as

an aid to them in prescription writing. This will be appreciated especially by some of the younger physicians who often lack confidence in the writing of prescriptions for official medicines where dosage, solubility, incompatibilities and vehicles are involved.

"(*c*) *Exhibits for Medical Groups.*—It is also planned that an exhibit will be placed in the building of the Philadelphia County Medical Society presenting the preparations and prescriptions recommended in each of the *A. M. A. Journal* articles and these exhibits will be photographed and described for general publication and distribution to pharmacists and hospitals.

"It is hoped that pharmacists in many localities will duplicate these exhibits before medical groups.

"*Pan-American Coöperation.*—It is gratifying to announce that the Pan-American Sanitary Bureau, through its director, Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service and its Assistant Director, Dr. Boliver J. Lloyd, and their staff, have undertaken the translation of the U. S. P. XI into Spanish as an official activity of the Bureau. It is hoped that the Spanish Edition will be available by April next when a large Pan-American Medical Congress will be held in this country.

"It is also expected that the medical articles on the use of official medicines, appearing in the *A. M. A. Journal*, will be translated into Spanish and reprinted in the official bulletin of the Bureau for circulation through the twenty-one republics affiliated in the Pan-American program.

"It should be understood, however, that the policy of the U. S. P. Board of Trustees in translating the U. S. P. into Spanish now for four decades has been primarily that it might be available to pharmacists and physicians in Porto Rico, the Philippines and in Cuba. In the latter Republic the U. S. P. has been adopted as the official Pharmacopœia for more than thirty years and has been made possible through these years by the coöperation of the pharmacists of Cuba and the help of the scientific staff of the University of Havana and especially Dr. Jose Guillermo Diaz.

"In the present revision Auxiliary Commissions from Cuba, Porto Rico and the Philippines have been participating in the revision (see the U. S. P. XI, page viii).

"It is expected that each of the other Republics affiliated with the Pan-American Union will eventually issue its own Pharmacopœia as is now done by Mexico, Brazil, the Argentine and others, but in offering the U. S. P. in Spanish it has been hoped that increased uniformity in nomenclature, tests and standards will be secured on this content.

"*Thanks and Recognition for Those Who Have Made the U. S. P. Eleventh Revision.*—The U. S. P. Committee of Revision and Board of Trustees are deeply conscious and gratefully appreciative of the unprecendented loyalty, self-sacrificing labor and large financial help contributed by individuals and organizations during the revision of the Pharmacopœia.

"This help has come not only from American physicians and pharmacists but from many in foreign countries. The close coöperation of the British Pharmacopœial Commission has been especially gratifying and points the way to far greater international participation in Pharmacopœial affairs. It is hoped that within the decade this may be realized by the establishment at Geneva, under the auspices of the Health Organization of the League of Nations, a Secretaryship on Pharmacopœias. This is now under serious consideration.

"A compilation is now being made of the contributions to the revision of the U. S. P. XI that suitable recognition may be given to those who have taken part in the program. It is only those who have demonstrated a willingness to contribute of their knowledge and time to the scientific or administrative work of the Pharmacopœia who have earned the right to actively participate in Pharmacopœial affairs; particularly must the Pharmacopœia be lifted from the level of politics.

"Messrs. Hauck, Lewitus, Maistelman, Seley and others took part in the discussion, which followed Chairman Cook's address.

"A rising vote of thanks was extended to the speaker."

HORACE T. F. GIVENS, *Secretary.*

NORTHERN OHIO.

The December meeting of the Northern Ohio Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held December 13, 1935, at the Faculty Club, Western Reserve University, Cleveland, Ohio.

This was a dinner meeting and given over to the election of officers for 1936 and the formulation of a bulletin to be mailed to 1400 physicians located in greater Cleveland and Northern Ohio. The *Bulletin* reads as follows:

Bulletin No. 1—1936.

Subject:—Trade Names.

Dear Doctor:

In this era of price discussion and complaints we should like to call to your attention a matter upon which coöperative thinking should be helpful to both professions. We refer to medicines with coined names or trade names which the law has classified as proprietary medicines.

A proprietary medicine is not unethical just because it is a proprietary. The American Medical Association has tried to list in New and Nonofficial Remedies those proprietaries it deems useful.

Some U. S. P. and N. F. preparations and mixtures of them have been given coined names and thus are more expensive than their book equivalents.

Some proprietaries come in pint bottles, some in twelve-ounce bottles and many in bottles of odd sizes, or, in case of tablets, in odd numerical count. Prescriptions for these come as often for a fraction over the original package as they do for a fraction under the original package. These cases are difficult for the pharmacist to handle with satisfaction to the physician and economy to the patient. Remnants of packages on the shelves of the pharmacy are a total loss.

Frequently, many physicians tell their patients to go to a pharmacy and get a medicine, sometimes a potent drug, or a proprietary. The motive is to save money for the patient. If, in your opinion, this procedure is correct, then write the name of the article, but do not give it verbally to the patient.

We believe this procedure to be very dangerous and the saving involved does not compensate for the danger.

1. The patient often makes a mistake in transmitting the name.
2. The patient "shops" for price and often goes home from an unscrupulous dealer with a different article.
3. The patient is often sold a much larger package than the physician intended for the patient.
4. The physician is legally responsible for what the patient gets.
5. If the medicine is a proprietary, the physician has openly endorsed it.
6. This procedure not only encourages but develops self medication. The patient passes the information on to the neighbors.
7. Unscrupulous stores tell people that Dr. X frequently tells his patients to buy this proprietary and therefore it must be good.

In conjunction with a committee of the Academy of Medicine we have prepared the following card which is offered for your consideration.

Card No. 22.

(For use of physician only.)

"1. If we receive a prescription for a proprietary upon a *prescription blank, with directions for the patient, and signed by the physician*, we are to understand that it is to be transferred from the original container, unless the original container is not of a distinctive color or shape and bears no mark upon it which identifies it. If the prescription is for a specified amount, that amount will be dispensed, and it is understood that the preparation is to be labeled as a prescription in the usual manner with the physician's name and his direction upon it. A charge must be made, in this case, not only for the service, the new container and label but also *because the pharmacist assumes responsibility for the contents.* (Alphonsas, Tiedge, *vs.* W. C. Haney, *et al.*, 184 Minnesota, 569, or 239 Northwestern, 611.)

"2. If the prescription is marked 'original container' and directions for the patient are

upon the prescription, it is understood that we merely place a prescription label upon the original container, removing only the printed matter appearing on or coming with the original package. This is to remove the influence of direct advertising to the patient.

"3. If the prescription blank or other paper merely bears the name of the proprietary, and no directions for taking, and does not carry the physician's signature, then it is to be sold as any 'over-the-counter sale' and at the regular price which is made to any customer asking for the article. This is not a professional transaction and is not so recognized."

"The Northern Ohio Branch of the American Pharmaceutical Association."

OFFICERS.

The following are the officers-elect for the Northern Ohio Branch, A. PH. A., for 1936: *President*, Ellsworth Loesch; *Vice-President*, F. W. Gehrung; *Secretary*, Neil T. Chamberlin; *Treasurer*, Herbert Decker.

Council: Term expiring December 1936—A. L. Flandermeyer, W. W. Hosler, Ellsworth Loesch, Edward Spease. *Term expiring December 1937*—Herbert Decker, Z. M. Gibson, N. E. Scribner, A. E. Walleck. *Term expiring December 1938*—F. J. Bacon, N. T. Chamberlin, A. P. Gegenheimer, E. L. McFetridge. *Term Expiring December 1939*—E. D. Davy, F. W. Gehrung, Joseph Jephson, H. E. Speer.

NORTHWESTERN.

A meeting of the Northwestern Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held in the auditorium of the College of Pharmacy of the University of Minnesota, Minneapolis, at 11:30 A.M., January 23rd. Students of the College of Pharmacy were guests of the Branch and took part in the program.

Miss Louise Schmitz read an article "Pharmacy a Profession of Service," by H. W. Haggard, M.D., which had been originally delivered by Dr. Haggard as a radio address and subsequently issued in pamphlet form by the Eastman Kodak Co.

Allan White read an article "Counter Prescribing" by I. Trachtman which was originally published in the *Practical Druggist*.

Rugnar Almin gave an illustrated lecture depicting the evolution of the prescription and projected on the screen many illegible prescriptions taken from the files of present-day drug stores.

CHAS. V. NETZ, *Secretary*,
RUGNAR ALMIN, *Chairman*.

A meeting of the Northwestern Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held in the auditorium of the College of Pharmacy, University of Minnesota, Minneapolis, at 4:30 P.M., Thursday, Nov. 21st. Gerald Fostvedt reviewed his thesis, "A Study of the Mechanism of the Reaction of Mayer's Reagent with Alkaloids." In the work incident to the preparation of the thesis he had carefully checked over most of the potassium-mercuric-iodide alkaloidal reagents and established the fact that the sensitivity of the various reagents was due to the amount of potassium iodide present. Those with a smaller KI excess were the more sensitive. A formula for a potassium-mercuric-iodide reagent was presented which was somewhat more sensitive than Valser's reagent and considerably more sensitive than Mayer's reagent.

CHAS. V. NETZ, *Secretary*,
RUGNAR ALMIN, *Chairman*.

Acute Fluorine Poisoning.—In discussing the recent sodium fluoride poisoning, Doctors P. J. Hanzlik and C. D. Leake bring out that these poisonings have additional interest in that they contribute to the knowledge of the minimum lethal dose of fluoride which will kill humans.

Dr. H. E. Hasseltine, of the United States Public Health Service—who contracted psittacosis in the work of dismantling the Pasadena laboratory of the California State Board of Health—has recovered from the effects of the disease.

JOINT SESSION WITH SECTION ON EDUCATION AND LEGISLATION, CONFERENCE OF PHARMACEUTICAL LAW ENFORCEMENT OFFICIALS AND PHARMACEUTICAL ASSOCIATION SECRETARIES, AMERICAN PHARMACEUTICAL ASSOCIATION

PORTLAND, OREGON, AUGUST 8, 1935.

The Joint Session of the above sections met in the Junior Ball Room of the Multnomah Hotel, Portland, Oregon, at 8:00 P.M., August 8, 1935. President F. V. McCullough, of the Conference of Pharmaceutical Association Secretaries, opened the meeting. M. N. Ford acted as secretary. Mr. McCullough turned the chairmanship over to Dr. R. L. Swain, chairman of the Conference of Pharmaceutical Association Enforcement Officials, who presided during the remainder of the session.

Chairman Swain called for reports on enacted and proposed legislation in force in the different states.

Mr. Clayton, of Colorado, stated that there were two pieces of legislation enacted in Colorado which were of importance to retail druggists—one restricting the sale of hypnotic drugs to prescription only and the other a law prohibiting the sale of prepared foods in any place used for other purposes. The Chairman asked if the latter mentioned law was a spite measure.

Mr. Baker, of Colorado, replied: Not particularly, that it was a movement going on all over the United States. He said that the hypnotic law passed in Colorado was the same as passed in other states, which was discussed during the morning session; that the law was only five months old and that they had good coöperation from druggists, hospitals and doctors; that the greatest difficulties encountered had been with hospitals. He stated they were endeavoring to have every hospital in the State, which could support a dispensary, employ a registered pharmacist; that they had been very fortunate so far, in licensing about 20 hospitals under the supervision of registered pharmacists; there were many hospitals not large enough to support a dispensary. They made a distinction with closed hospitals and hospitals which are under the care and direction of physicians—private hospitals. In such cases they required that they have prescriptions filled outside of the hospital by retail drug stores. Mr. Baker stated that Mr. Bishop from his state (Colorado) could tell more about the food legislation than he could.

Mr. Bishop explained that the food law was, in his mind, a very vicious law, sponsored by the restaurant people, in fact, supported by the National Restaurant Association and that there had been about $15,000.00 expended in an effort to put it over. The druggists made no objection to regulatory measures concerning sanitation, etc., but that the law did not contain such regulations. The law provided that all food, even a sandwich or piece of pie, had to be kept in a separate room from the other part of the building.

Mr. Bishop stated that a fund of $5000.00 had been raised to fight the bill. It was taken to the Federal court and the Federal judges granted an injunction restraining the law from becoming operative until it could be tried in the District court. If tried in the District court and declared a law that they would still take it to the Federal court.

Mr. Bishop stated that the hypnotic law was a doctor's measure—that before they knew much about it, the bill was passed and handed over to the Board of Pharmacy to administer.

Roy Cook, of West Virginia, spoke concerning similar legislation which had been proposed in West Virginia; this, he stated, included not only food sales but soda fountain sales as well. This covered a larger territory, as hundreds of drug stores had soda fountains. One of the measures was to the effect that food and soda fountain service must be kept separate from the drug department. The aperture between the two departments to be not more than 3 feet wide and over 7 feet high. After considerable effort on the part of the pharmacists the bill was defeated, but similar legislation seemed to come up regularly at each session of the legislature. He referred to an ice cream bill—the standard ice cream bill introduced in several eastern states. It contained a clause to the effect that all milk products should be pasteurized at the place where they were sold, but that so far they had been able to defeat it.

Dr. Swain stated that at the last meeting of the National Association of Boards of Pharmacy

arrangements had been made to institute a fact-finding department to which all the states would supply information.

The Chairman announced that inasmuch as this was an informal program, discussion was in order on legislation on the statute books, proposed legislation or experiences in prosecution of legislative programs. He then stated that he had a copy of a proposed measure for enactment, being Senate Bill 3084 introduced in the U. S. Senate May 13, entitled "A bill to regulate the practice of pharmacy in the District of Columbia." That it was one of the most unique attempts at pharmaceutical legislation with which he had come in contact.

Dr. Swain cursorily outlined sections of the proposed bill—its attempt to deal with definitions as concerns primary preparations and the ordinary patent medicine type, the question of the dispensing doctor—that in order for him to qualify as a medical dispenser he must have a permit and pass an examination before the board; the setting up of an office of superintendent of drugs and specifying his duties in that office; Section 9 dealing with establishment of standards, hours of inspection, etc.; the bill's attempt to deal with substitution, providing for fines, etc., and the provision, in event of a second substitution, of forfeiture of a pharmacist's right to practice pharmacy; prohibition of peddling drugs and medicines, provision for standards of equipment, etc. He stated that it is a most interesting piece of legislation for the pharmacists and that attempts might be made to duplicate a good many of its features in other states.

L. L. Walton understood that the bill provided for establishment of an office to be known as superintendent of drugs and inquired if it specified the duties of that officer.

Dr. Swain replied that it did, outlining such duties, etc., it also provided means for his removal, etc.

C. B. Jordan inquired if there was anything in the bill to control prescribing of drugs by pharmacists. The Chairman stated that he had made no critical analysis of the bill and did not know all of the points it covered, but that he thought the bill novel and that it would justify reading and study.

Mr. Cook inquired as to what was meant by the term medical dispenser in the bill.

Dr. Swain, reading from the bill, stated the term medical dispenser meant a person licensed to practice medicine in the District of Columbia and licensed by the board of pharmacy to dispense for the treatment of his *bona fide* patients but did not mean dispensing by the drugless method of healing, etc.

H. E. Kendig stated that he did not believe it would be possible for such legislation to be enforced—that there were times for the quick alleviation of pain when a physician would give a patient a tablet and that, under the proposed measure, would constitute a violation of the law.

H. C. Christensen called attention to institutions prevalent throughout the Northwest known as Hospital Associations where they (the associations)contracted to give a medical service and the physicians employed by such associations had stocks of drugs which they used in their practice.

L. L. Walton, of Pennsylvania, inquired relative to the authority provided in the bill under discussion for determination of what action should be taken in case of reported violation, whether it remained with the board of pharmacy or not.

Dr. Swain thought it did—that enforcement had been placed with the board of pharmacy and was to be made effective through the Superintendent of Drugs, in conjunction with the police department of the District.

Roy B. Cook inquired if it was to be financed with federal funds. The Chairman thought it would be.

Dr. Hugo Schaefer, of New York, stated that two years ago they were successful in passing a bill in New York, the so-called Dunkel bill, which on the face of it simply put under the control of the board of pharmacy the sale of those preparations which contained poisonous, deleterious or harmful ingredients; that they had it first "contained;" later, they passed the law without the word "contained," which weakened the law, but it was placed under the control of the board of pharmacy. The board, however, set up regulations necessary to carry out the duties under the law. It was at first ruled that such preparations should only be sold in registered pharmacies by registered pharmacists. Dr. Schaefer pointed out the importance of proving to a court, when the measure came up as a test case, that the pharmacists were adding a measure of safety by the regulation.

He stated that further regulations were still needed. The board ruled that since the law said "preparations which were poisonous, etc." they would be considered poisonous if the total contents of the package were poisonous. A definition was in the old law—that "any preparation which in 60-grain doses or less might cause death in human adult life." It was held that if the total contents of the package were dangerous to human adult life, then that preparation could only be sold by a registered pharmacist.

Dr. Schaefer explained that they passed a labeling law which read: "Any preparation which contains a poison, the name must be shown on the label," which meant that if a preparation had strychnine in it, that must be noted on the package. While it was, to some extent, a formula disclosure law, it simply meant that names of potent ingredients must be stated on the label. At the same time, they passed a law that the manufacturer's name and address must be printed on the package and that the preparation must be made under the supervision of a pharmacist or chemist. In so doing, they had gotten away altogether from the problem of trying to distinguish between patent medicines and what are called proprietaries—that they did not have to make any distinction, although it practically meant that all of the ethical preparations are limited in sales by the drug store and the number of patent medicines allowed to be sold outside the drug stores is very small. They had had cases in court under the law with collections of fines and so far had been very successful in its application.

The Chairman asked if they had met with much opposition to the bill and Dr. Schaefer replied that there was a hearing, of course, but that the secretary of the board of pharmacy was very successful in working it out; they had had more trouble with the Dunkel Law.

Fred Schaefer asked, if when the word "contained" was omitted, they allowed it to go over. Dr. Schaefer replied that they had.

The Chairman brought up the question as to enforcement on goods from other states and Dr. Schaefer explained that on all preparations sold in New York, as far as labeling was concerned, they enforced it, so far as the provisions of the Dunkel bill itself were concerned. In other words, if the preparation was manufactured outside the state they would still require that its contents must be stated on the label. They could not enforce rules outside the state for the manufacture by chemists, etc.

Dr. L. L. Walton inquired whether or not the New York pharmacists had considered the question of any liability, or rather increased liability, resting upon the pharmacist who sold one of these packages with resultant injury therefrom to the customer.

Dr. Schaefer replied that the existing law increased the liability of the pharmacist—that the bill says that he must use reasonable precautions. There was no use in trying to pass the bill—requiring that they should be sold directly by the pharmacist without taking on added responsibility, but that they felt that the possibility of such liability as was mentioned was the lesser of the two evils. Dr. Walton then stated that he could see where they would have to assign some such reason in maintaining the law—that the pharmacist should be willing to take some responsibility, in exchange for being given preference in selling.

Dr. A. G. DuMez asked if Dr. Schaefer had noticed any tendency on the part of the manufacturers to reduce the size of their packages—that they might reduce to a ten-cent size in case a larger size would make the package a poison.

Dr. Schaefer stated that had been considered, but that the law had not been in force long enough to show whether or not there would be such a tendency—that they were talking about the restriction of sales of preparations to the pharmacists for the purpose of helping the pharmacists but, on the other hand, it was for the betterment of health, generally—that sometimes children will get hold of a package of pills and take the entire package—that in such a restriction as they had embodied in this law they felt they had gone a long way toward protecting the public health.

A. L. I. Winne, of Virginia, said that in several states where the attempt had been made to restrict the sale of patent and proprietary medicines to pharmacists, that the laws making such restrictions fell down, because the pharmacists were charged with no additional duty other than the grocer was charged with—that those who drafted the laws did not take the precaution to make a distinction between the pharmacist and anyone else. He believed they would have to put it as a special duty devolving upon the pharmacist, that duty being—when such a sale is made that the pharmacist must call to the attention of the purchaser that the ingredient contains poison.

C. B. Jordan inquired if there was any objection of retail pharmacists to the bill. Dr. Schaefer replied that there was not.

B. V. McCullough asked if there were any one-man drug stores in New York. Dr. Schaefer stated that there were and that he was curious to know what thought prompted the question. Mr. McCullough said that usually in such stores—there was an unregistered assistant—a son, daughter or wife, and that he was thinking of the law in that connection.

The Chairman stated that he did not see the basis of any damage suit under such a law more than ordinarily obtained. Dr. Schaefer stated that the law, as he had observed its operation, was a fine thing.

Roy B. Cook inquired if in a drug store in some other state not having such a law, there could be any damage brought against them for not giving notification of poison-content at the time of making the sale.

Chairman Swain replied that the case of Emanuel *vs.* West, he thought, answered that. In that case, some one purchased a bottle of headache medicine, which resulted in a damage suit. There was no statement on the label indicating anything of a poisonous nature. The court laid down the rule that it was a sale of an article of merchandise and that the party making the sale, having no information, no liability could attach to him for selling it; but that he (Dr. Swain) surmised that there might be a real question if the label would have told what it contained.

Dr. Schaefer stated that if the pharmacist in New York used reasonable precaution in pointing out the contents of the package, no liability could attach to him, but if he did not use precaution in so pointing out, then the measure of liability of that man is far greater, because the law distinctly places the duty upon him. He stated that there had been some cases—not of medicinal preparations but of cosmetics—where the decisions made two distinctions that were very interesting. A certain kind of skin bleach had been sold in a department store, of unknown proportion and content, that had created some kind of a skin rash; the bleach had been asked for by the customer and sold by the store and the court held that the manufacturer was the one liable. In a similar case, where the product was sold by a demonstrator of the store, the retail store and manufacturer were jointly liable.

Roy B. Cook stated that it would seem, off-hand, that the seller in New York would have a shield surrounding his sale that would not apply elsewhere.

Chairman Swain stated that he believed that unquestionably the principle underlying the Dunkel bill was sound, not only in so far as it referred to the retail store, but in general, and whether it burdened the retailer or not should not be taken into consideration—that he thought it a fine thing so far as the principle itself was concerned; he thought they owed it to the public and to themselves, citing an old rule laid down that "while druggists are called merchandisers, we must remember that they are something more," and that he thought a revision of their terminology quite in line.

F. H. King, of Ohio, said he felt that pharmacists, as a general rule, made the practice of putting the public on guard, that in his store when a customer asked for Hinkle pills, he and his pharmacists would invariably ask: "Do you mean the tablet containing strychnine or do you want the tablet without strychnine?" That he had confidence in pharmacists, that in selling a tablet containing strychnine they would warn the customer.

B. V. McCullough brought up the subject of state medicine; that is, fresh biologicals, antitoxins, rabies treatment, etc., being furnished free by the state board of health.

Mr. Cook thought if the matter were examined, they would find a good many states had that provision now. Mr. McCullough informed they did not have it in Indiana and did not want it. Mr. Cook stated it was quite general in his state for medicine supplied to be distributed for charity purposes, but that often they found their way into channels far removed from any charitable need. Mr. King brought out that opposition would put the pharmacist in the danger of being considered inhuman. Mr. McCullough said that Indiana was very liberal in handling the situation, that one desiring rabies or diphtheria treatment could go to the druggist and get it, and that in turn the druggist charged it to the county at retail prices.

Dr. Schaefer, of New York, stated they had some difficulty with the situation of free medicines. However, he believed that it would put the pharmacist in an awkward position to oppose it—that he thought the solution was to try to get regulations through which would properly regulate its disposal and eliminate the giving away of medicines to people not actually in need of it. The situation was comparable to the free clinics which the doctors had to contend with; that a few years ago almost anybody could go to a free clinic and get treatment, but that now they were

requiring a strict personal history of each case and it had to be shown that the person was not able to pay for such service.

This concluded the discussions and the Chairman stated that if there was no further business to come before the meeting, a motion for adjournment was in order. The motion was duly made, seconded and carried, and the meeting adjourned.

R. L. SWAIN, *Chairman*,
M. N. FORD, *Secretary*.

THE CONFERENCE OF PHARMACEUTICAL ASSOCIATION SECRETARIES.

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN PORTLAND, ORE., WEDNSDAY, AUGUST 7TH, 2:00 P.M.; FRIDAY, AUGUST 9TH, 9:30 A.M.; JOINT SESSION WITH SECTION ON EDUCATION AND LEGISLATION AND PHARMACEUTICAL LAW ENFORCEMENT OFFICIALS, THURSDAY, AUGUST 8TH AT 8:00 P.M.

The First Session of the Conference of Pharmaceutical Association Secretaries was called to order August 7th, at 2:00 P.M., by President F. V. McCullough.

The following responded to roll call: Roy S. Warnack, California; C. J. Clayton, Colorado; R. C. Wilson, Georgia; Elmer B. Williams, Idaho; W. B. Day, Illinois; F. V. McCullough, Indiana; E. F. Kelly, Maryland; J. G. Beard, North Carolina; Robert P. Fischelis, New Jersey; L. C. Duncan, Oklahoma; Jack Lynch, Oregon; Walter D. Adams, Texas; A. L. I. Winne, Virginia; J. L. Hayman, West Virginia; Jennings Murphy, Wisconsin.

On motion of R. C. Wilson, duly seconded, the members stood in silence out of respect to Secretaries W. E. Bingham, Alabama; Edward S. Dawson, New York; P. H. Garvin, Connecticut; and Roy C. Reese, Kansas, deceased.

Owing to the absence of Secretary Carl G. A. Harring, J. Lester Hayman acted as Secretary.

President F. V. McCullough presented the following report which, on motion duly seconded, was accepted.

REMARKS OF THE PRESIDENT OF THE CONFERENCE OF PHARMACEUTICAL ASSOCIATION SECRETARIES.

BY F. V. MCCULLOUGH.

Fellow Secretaries and Friends of Organized Pharmacy:

I am very happy to have the privilege of greeting you at the opening of this, the Eighth Annual Meeting of The Conference of Pharmaceutical Association Secretaries, and to have the honor of presiding over its deliberations.

In behalf of the Conference I extend a very cordial invitation to all Pharmaceutical Secretaries and other officers to attend the sessions. This applies to the officers of metropolitan groups as well as state associations. Whether your organization has been represented by membership in the Conference or not you are welcome and invited to participate in our deliberations.

While our printed program may not appear to be impressive, I am sure you will find the subjects of much interest and of value in your association work, as I have a very high regard for the leadership and council of those who have attended and participated in the programs of previous meetings.

The Conference was organized at the meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION in St. Louis in 1927. Each year since it has held a meeting such as this, where matters of particular interest to pharmaceutical association secretaries were discussed and secretaries were given an opportunity to exchange viewpoints on their many problems.

Throughout these eight years bulletins have been exchanged which have given our members the advantage of experiences of other secretaries in conducting membership campaigns, holding conventions, conducting legislation, etc.

The AMERICAN PHARMACEUTICAL ASSOCIATION has a valued record of service to American pharmacy. Its annual conventions have been a means of bringing together men who are devoting their lives to the various phases of pharmaceutical practice, where they can discuss with each other their problems, theories, experiences and results of their endeavors and in that way be of assis-

tance to each other. It is one way progress in our profession and the drug industry has been made, particularly so in the scientific and professional.

These conventions have also been the birthplace of other national organizations. Our organization was mothered by it as also were the National Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy. Our Association is unlike them in that the principal functions they each have to perform are wholly within their groups, while the principal objects of the Conference of Secretaries, as set out in the Constitution and By-Laws, concerns the improvement of the service to the membership of all organized pharmacy.

An opinion prevailed among the secretaries in attendance at the last meeting of the Conference, which was held in May 1934, in the city of Washington, that state associations have failed to give the officers of our national associations the support and coöperation that they were capable of giving during the period of preparing a code for the drug trade and that state associations have failed to receive the recognition by code authorities to which they were entitled. It was necessary for the national leaders to stand alone in their fight for the drug trade while forty-eight strong associations representing probably more than 30,000 retail druggists desiring to be of assistance stood by. The reason for this condition was believed to be the lack of a close-working affiliation of state associations with each other, with one directing head, and the lack of a closer affiliation with our national associations.

Following a discussion of these conditions a resolution was offered and approved stating that in the opinion of the Conference a federation of state associations should be formed at an early date, that the matter of such an organization should be presented to the Council of the A. Ph. A. and the Executive Committee of the N. A. R. D. It was an impromptu resolution and to those who did not know the spirit in which it was presented, discussed and acted upon, it was susceptible of being misconstrued, and following the convention it was erroneously reported in some sections that the Conference of Pharmaceutical Association Secretaries was favoring and sponsoring a new national association to be known as "A Federation of State Associations."

The resolution did not suggest or imply a new association, because the resolution itself placed the matter before our national associations to whom it was referred. The theme of the discussion was that coördination of effort was more to be desired than duplication of effort, that if state associations were federated and closer affiliated with out national associations, organized efforts would be better coördinated.

There was nothing in the resolution outlining the mechanics of a federation or a better affiliation with the national groups. The only thought as intended by the Conference was that a federation of existing state associations was essential if the industry was to receive the full benefit of pharmaceutical organization. Personally, I believe and have continually contended that the mechanics of such an organization should come in the way of proposals from the national associations to the state associations, that this conference should not attempt to dictate to either the national associations or to state associations, but to be of assistance to both in advisory capacity. As the matter was referred to the executive officers of both associations it has received their consideration since that time and some progress has been made, as will be reported at our second business session.

The matter of a closer interweaving of our Pharmaceutical Associations is a responsibility facing our organization leaders this year and it should be faced courageously and unselfishly. There is a united opinion supported by much evidence that a better coördination of pharmaceutical association activity is very essential. There may be and it is quite natural there would be a division of opinion of the best plans to bring it about. Our conference is not advocating any plans. It is looking to our national associations for them. The work they are doing in their respective fields of endeavor should not and must not be sacrificed in this new order. Each is needed and it is hoped will be strengthened by the closer tie-up.

Our conference is not without a share of the responsibility in this matter. We are closer to our membership than the officers of our national associations. It is our responsibility to secure membership support to any plan offered by our national associations and I recommend that the conference go on record pledging its coöperation in securing membership and state association acceptance to any plans proposed by our national associations that will lead to a closer coördination of organization effort. I personally believe that if a combined membership in our national and state associations can be made available at a reasonable fee many will take advantage of it and

it will be a connecting link that will add much strength to associations representing Pharmacy.

As a representative of the Conference an invitation was extended me to address the convention of the National Association of Retail Druggists during their annual convention at New Orleans last September. At that time I endeavored to clarify the erroneous report connecting our Conference with a proposed new national association. With the approval of the executive officers some suggestions were made for the purpose of placing something constructive before the convention. Among them was a request for a bulletin service by the N. A. R. D. to affiliated state associations, believing that such a service would fill a long felt need.

During the convention a meeting of secretaries was called and a resolution was prepared and presented to the resolutions committee of the convention requesting this bulletin service. Secretary Dargavel called a meeting of the presidents and secretaries of state and metropolitan associations, at which time Harvey Henry, chairman of the executive committee of the N. A. R. D., now president, announced that the bulletin service would be inaugurated.

A Washington bulletin is now being sent by the Washington representative of the N. A. R. D. to the officers of state and metropolitan associations, and it is being found of great value and the character of the bulletin is reflecting credit to the N. A. R. D. and its Washington office.

May I again refer to the program of this Conference: Rowland Jones, Washington N. A. R. D. representative and author of the bulletins, is to address our Conference at this session. Following his address we should have an open forum discussion of ways to gain the most from this bulletin service. At the Second Session R. C. Wilson, of Georgia, will make a report on the conference he attended with the representatives of the A. PH. A. and the N. A. R. D. which met in Washington for the purpose of considering ways and means of forming a federation of state associations under our national organizations.

At the same time we will have an analysis of a questionnaire sent out from my office to the secretaries concerning the report on this conference. This will be a very important session and it is hoped that a large number of states will be represented.

At our Third Session secretaries of wide experience and who have successful records of accomplishment will address the Conference on three important fields of service. Much valuable information will be gained at this session and no secretary should permit anything to interfere with his attendance. Those who have had experience in fair trade legislation will give us the benefit of their experience.

The fields of service for trade associations or professional societies vary but little with us; especially those of us who are secretaries of state associations find three distinctive fields of service—*first*, promoting the professional, technical or scientific phase of the practice of pharmacy, *second*, the legal and legislative and *third*, the economic business and trade practices. In these fields of service state associations have very much in common with each other and also in common with the national association to which they owe allegiance and to the metropolitan associations that are within their respective groups.

Those who became identified with pharmaceutical associations in the earlier days found the principal field to be "the promoting of the professional or technical phase." Soon and very rapidly there developed the necessity of legal and legislative service and in recent years there has developed a broad and important field of service in the economic and trade practice field. In many of our states, and especially so in mine, the promoting of the professional or technical phase of the practice of pharmacy is being left largely to our Pharmacy Board and to our Colleges of Pharmacy, to whom druggists look for such leadership rather than to the Association.

Many members are inclined to measure erroneously the success and the value of an association by its activity and results in the legislation, overlooking the great service associations are rendering to the industry in the economic or trade practice field. The time has now come when regulatory legislation is going beyond matters of public health and public morals and is including business and trade practices. Evidence of this is in the number of states that have recently enacted fair trade laws. This makes a very close tie-up of the economic and legislative fields of service and also makes it very essential for all states to harmonize their endeavors along this line.

In concluding may I leave these thoughts: The progress and success of a trade association does not depend entirely upon the number of its members or the treasurer's balance. Any association that has within its membership 50% of those engaged in the industry that it represents, and among them a good per cent of the leaders, should undertake definite objectives and meet with so

much success that membership support will be attracted. Such an association is in a healthy condition, although it may be thought to be weak in membership.

The achievements of an association should not be measured by the treasurer's balance or the membership roll or the ballyhoo of its officers or the wail of those dissatisfied. The character of its objectives, the scope of its service, the manner in which it coöperates with other associations, help to make a yardstick by which accomplishments of association endeavors are measured, and accomplishments of associations' efforts are often not recognized, although they may be ever so valuable.

The progress and accomplishments in our endeavors are not to be credited to one association or to one or any group of individuals. It is the result of combined organization effort within the industry and the unselfish service of many faithful leaders and their loyal supporters within the ranks. So may each of us continue to do his part in this scene of organized activities, and our associations do their part. May the inspiration of this convention, together with the progress made in our own respective associations, be the starting place for another year's unselfish service in our chosen fields of endeavor, and may the industry continue to be well served by organized pharmacy; and may we as association officers be worthy of the support we are receiving from those within the ranks of our membership who are depending upon us for unselfish council and leadership.

The report of Carl G. A. Harring was read and accepted; it follows:

REPORT OF THE SECRETARY.

Fellow Secretaries:

In rendering this annual report your secretary greatly regrets his inability to render it in person and of having the privilege to once more meet the admirable body of men who, in face of difficulties of various nature and occasional criticisms, many of them unjust and uncalled for, carry on from day to day their labors for the advancement of organized pharmacy—oftentimes without hope of fee or reward. I likewise regret that this report may seem meagre in point of recording achievements in the secretarial world during the past year, but with the increasing system of exchange of pharmaceutical journals and association bulletins, as well as the establishment of official as well as several non-official Washington bulletins, secretaries are being kept well informed about what is going on, and have facilities for keeping the membership of their association equally well informed.

The highlights of the past year from a secretarial standpoint were the conferences in New Orleans with the N. A. R. D. executives, which resulted in the bulletin service now rendered by the National Association of Retail Druggists, and the meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION, the N. A. R. D. and the Secretarial Conference officers held in Washington for the purpose of discussing closer affiliations between these bodies. As your secretary was unable to attend this Conference, he will leave the report of the same to some one who attended the meeting, and the conclusions to be drawn from the proceedings to the report of these gentlemen and our president.

It is a regrettable fact that the Secretaries Conference is not a one hundred per cent organization. If allowance is made for some real secretaries that we are fortunate to hail as members of our Conference, we are less than a fifty per cent organization. Possibly the five-dollar membership fee acts as a deterrent on the other fifty per cent—or maybe we have not shown good salesmanship in offering this opportunity for closer coöperation to all our brother secretaries.

Your secretary would again suggest that a fee of two dollars would be sufficient for the purpose of defraying expenses, and would perhaps make the membership proposition more attractive.

With the sincere hope that it may be my privilege to be present at the next meeting of our Conference, I respectfully submit this report.

(Signed) CARL G. A. HARRING, *Secretary.*

Robert C. Wilson stated that he was asked to attend a joint conference of the secretaries and representatives of the National Association of Retail Druggists and AMERICAN PHARMACEUTICAL ASSOCIATION. Secretary McCullough and Secretary Harring were the other members of the committee; unfortunately, they could not attend the conference in Washington. Secretary Hayman was invited to be present; Rowland Jones, John W. Dargavel and Thomas S. Smith were

also present, and E. F. Kelly and R. L. Swain represented the AMERICAN PHARMACEUTICAL ASSOCIATION.

Secretary Wilson stated that some closer working plan was necessary between state associations and the two national associations, that there should be a common objective, and some effort should be made to work out plans by which the aims could be directed and the objectives reached. He stated that an attempt should be made to acquire confidence in leadership. The means should be provided whereby this could be maintained. He suggested to the conference the possibility of a bulletin, half of which would be under the auspices of the N. A. R. D. and the other half under that of the A. PH. A. This publication should be sent out once a month and each state should contribute a small sum for each member, say 50 cents. He also suggested that a plan should be worked out whereby all members of state associations would become affiliated members of the N. A. R. D. and the A. PH. A. The matter was discussed and it was decided that there be no consolidation, but it was generally understood that a suggestion would be submitted to the Council of the A. PH. A. and to the Executive Committee of the N. A. R. D. He thought that the discussions resulted in the recommendation along these lines by President Fischelis. He felt that something had been started which might be developed.

Secretary Beard thought it was unnecessary to have two national organizations. This idea obtained in his state. In his opinion, if the two organizations consolidated they would command the respect of every pharmacist, and when such an organization would work in harmony things would be accomplished. As far as the publication is concerned, the name made no particular difference.

President F. V. McCullough stated that there was a motion before the Conference amending Article B of the By-Laws and reducing the annual dues from $5.00 to $3.00 a year. The motion to amend the By-Laws was carried and reads as follows:

"Membership dues in the Conference shall be $3.00 for active and $3.00 for associate membership for the calendar year, or such other amount as may be fixed at the annual convention of the Conference."

CONSTITUTION AND BY-LAWS OF THE CONFERENCE OF PHARMACEUTICAL ASSOCIATION SECRETARIES.

CONSTITUTION.

Preamble.—WHEREAS, for mutual benefit and advancement there is a national organization of every branch of pharmacy and the drug trade of America excepting one composed of secretaries of pharmaceutical organizations; and

WHEREAS, secretaries of pharmaceutical associations, by reason of their close contact with the individual membership of the pharmaceutical profession, are in a position to do the greatest good to the largest number of members of the profession in the dissemination of pharmaceutical knowledge and information; and

WHEREAS, it is necessary and desirable that pharmaceutical secretaries shall encourage and promote the welfare of and fraternity among the members of the various pharmaceutical organizations, by transmitting to their members for mutual benefit such professional, executive, convention, organization and legislative information, obtained by reciprocity and exchange of ideas, as will help to maintain within each association the high ethical and efficient standards generally observed by other pharmaceutical organizations

Therefore, to provide for the accomplishment of the above-enumerated objects, WE, the secretaries of pharmaceutical associations, do form ourselves as individuals into an association and agree to be governed by the following Constitution and By-Laws:

ARTICLE I—*Name.*—The name of this organization shall be Conference of Pharmaceutical Association Secretaries.

ARTICLE II—*Membership.*—Membership in this organization shall be of two classes, active and associate. Active membership shall be confined to State Pharmaceutical Secretaries and full-time secretaries of local retail pharmaceutical associations; associate membership to persons who have served as secretaries as defined under active membership for a period of not less than three years.

ARTICLE III—*Objects.*—To provide for interchange of executive information between

pharmaceutical organizations and to improve the service to members of pharmaceutical associations.

ARTICLE IV—*Officers and Election.*—The officers of this association shall be a President, a First Vice-President, a Second Vice-President, a Secretary-Treasurer and an Executive Committee consisting of the President, the two Vice-Presidents, the Secretary and five elected members. Officers shall be elected at the annual convention and serve for a period of one year or until their successors have been elected.

ARTICLE V—*Meetings.*—The Conference shall meet annually at the time and place of the AMERICAN PHARMACEUTICAL ASSOCIATION'S annual convention, or at such other times and places as the Conference or the Executive Committee deems advisable.

ARTICLE VI—*Constitutional Amendments.*—Amendments to this constitution may be submitted in writing at any session of the annual meeting and be acted upon at any succeeding session.

BY-LAWS.

ARTICLE A—*Duties of Officers.*—(*a*) The *President* shall preside at all meetings of the Conference and the Executive Committee, appoint all committees not otherwise provided for, call special meetings of the Executive Committee when deemed advisable for the good of the Conference.

(*b*) The *First* or *Second Vice-President* in the absence of the President shall fulfil the duties of the President.

(*c*) The *Secretary* shall be responsible to and under the direct control and supervision of the Conference and Executive Committee and his duties shall be as follows:

1. He shall keep a record of all meetings and conduct and preserve all correspondence of the Conference.

2. He shall act as Secretary of the Executive Committee, and, if necessary, of all other committees of the organization, keeping a record of the work of each committee, issue calls to its meetings and keeping its committeemen informed of pertinent matters, issue bulletins under the direction of the committee to the membership of the Conference, relative to matters under the committee's jurisdiction, collect and compile data to further the committee's work, supply its committeemen with stationery and forms and render such other assistance as each committee may require.

3. He shall keep the members of the Conference informed, through bulletins issued to the membership of all business transacted by the various committees and at the annual convention of the Conference.

4. He shall perform such other duties as the Conference or the Executive Committee may designate from time to time.

5. While acting as the Treasurer he shall receive all funds and disburse the same under the direction of the Executive Committee, or by vote of the Conference, and report in detail at each annual meeting.

6. He shall make a report of his year's work at each annual convention of the Conference.

(*d*) The *Executive Committee* shall provide for the property and equipment necessary to the proper functioning of the organization; shall regulate and control and dispose of any property belonging to the Conference and transact all other business of the Conference between annual meetings and fill all vacancies that may occur in elective offices between annual meetings, and perform such other duties and exercise such other powers as may be delegated to or conferred upon it by the Conference or the Constitution and By-Laws. It shall fix the compensation of the Secretary.

ARTICLE B—*Dues.*—Membership dues in the Conference shall be $5.00 for active and $3.00 for associate membership per calendar year, or such other amount as may be fixed at the annual convention of the Conference.

ARTICLE C—*Committees.*—Standing Committees. Unless otherwise provided for, the President shall appoint from the membership the following standing committees of three members each:

1. Committee on Nominations
2. Committee on Legislation

3. Committee on Publication and Publicity
4. Committee on Programs of Meetings
5. Committee on Speakers.

Special Committees.—The President shall appoint from the membership such special committees as may be authorized by the Conference or by the Executive Committee. Such special committees shall lapse at the next annual meeting unless otherwise provided.

ARTICLE D—*Activities.*—The activities of the Conference shall be:

1. To provide for the interchange of association publications.
2. The interchange of state pharmacy laws and important city ordinances affecting pharmacy.
3. Interchange of annual convention information, such as arrangements, programs, financing, donations, contributions, legislative activities.
4. Round table discussions on Association Management.
5. Such other activities as may be recommended by the Conference in annual convention.

ARTICLE E—*Order of Business.*—The order of business for the annual convention of the Conference shall be as follows:

1. Call to order
2. Calling the roll
3. Reading the minutes
4. The President's Address
5. Appointment of committees
6. Reports of officers
7. Reading communications
8. Report of Committee on Membership
9. Election of members
10. Election of officers
11. Miscellaneous business
12. Reading of papers, addresses and discussions
13. Unfinished business
14. Installation of officers
15. Adjournment:

ARTICLE F—*Rules of Order.*—The ordinary rules of parliamentary bodies shall govern the Conference and shall be enforced by the presiding officer.

ARTICLE G—*Amendments.*—Amendments to the By-Laws may be submitted in writing at any annual meeting and be acted upon at any subsequent session.

Rowland Jones stated that the Bulletin Service was started as a direct result of the request made by the group referred to. He stated that probably some mistakes had been made, but the effort was in the direction of presenting something valuable for each individual. One of the main objects of the *Bulletin* was to bring information to the Secretaries which could be passed on to the membership of the Associations. There has been criticism but also commendations. The idea in presenting matters was to present the subject as clearly as possible so that the information would be understood. In one of the bulletins the alcohol proposition was discussed and a few days after the *Bulletin* was mailed out he was privileged to speak at a district meeting of the Maryland Pharmaceutical Association, and one of the druggists accused the N. A. R. D. of defending boot-legging. In a bulletin subsequent to that he endeavored to explain this misunderstanding. Many thought the *Bulletin* of sufficient importance to be sent out to all of the members. Information on these matters reached the Government. Mr. Jones stated that he had no new information but he would like to hear discussion as to how the *Bulletin* might be made of greater service, that it could be enlarged to about twice the size for the same postage. He solicited criticism and suggestions.

A short time ago pamphlets were mailed out on the Patman investigation of the American Retail Federation. This investigation has brought to light a great many things that have attracted attention. Among other things the investigation showed that the chain stores did 50 per

cent of the food business and that their success was dependent on the discount which they are able to obtain through their buying power.

Mr. Jones recommended that the report be read by the members, because the information given is sworn testimony and gives information on many different things that are going on in the business world. Among these are the methods of fighting state legislation. He was amazed at the careful way in which this was worked. Before leaving Washington he had spoken to Congressman Patman and the latter informed him that the bill would probably be reported on by the Committee to whom it was referred by a vote of fifteen to three. The Committee on Judiciary had held several sessions in discussing the Patman Bill.

It was asked what this bill would accomplish for the retail pharmacist and Mr. Jones replied that it will make illegal any discount which cannot be demonstrated as being an earned discount. The seller cannot give a discount to any buyer which he does not give to all buyers on quantity basis, unless it can be proven that the large volume purchased results in economy for him.

It was stated of a company that no discount on a quantity in excess of one gross was justified on the basis of economy and represents no savings to the manufacturer more than that which is not earned on a quantity basis. The motion was made and duly seconded commending the N. A. R. D. for the *Bulletin Service* to State secretaries.

The First Session was then adjourned.

SECOND SESSION.

The Second Session of the Conference of Pharmaceutical Association Secretaries was convened by President F. V. McCullough at 9:30 A.M., August 9, 1935.

The report of the Committee on Nominations was called for; it was presented by Charles J. Clayton, as follows: *President*, J. W. Slocum, Iowa; *First Vice-President*, Roy S. Warnack, California; *Second Vice-President*, William B. Day, Illinois; *Secretary-Treasurer*, Carl G. A. Harring, Massachusetts; *Executive Committee:* the foregoing officers and F. V. McCullough, Indiana; A. L. I. Winne, Virginia; Robert C. Wilson, Georgia; J. J. Gill, Rhode Island; J. Lester Hayman, West Virginia; Jennings Murphy, Wisconsin; *Delegate to the House of Delegates*, Charles J. Clayton, Colorado.

On motion, in due course, the officers and committee members were elected.

Charles J. Clayton, speaking for J. W. Slocum, who was absent, on "The Secretary's Obligation to the Industry and Profession in Sponsoring State and National Legislation."

Speaking for himself—"he acted in an advisory capacity and collected information and disseminated news. He did not make any attempt to dictate the policies of the legislative committee; the members acted according to their own views on the suggestions. He did not think the secretary should act as an aid and as a director of activities."

R. C. Wilson suggested, owing to the small attendance, that instead of carrying out the program a further discussion of the bulletin be taken up. He said, "some progress is being made. In conversation with President McCullough and the Secretary, the latter gave figures on the cost of 30,000 copies and that this could be sent to all members of an association for about 25 cents per year. He cited Georgia, with 500 members would pay $225.00. The suggestion included further that there would be no duplication, that the editorial direction would be by the two associations. He considered this a forward step and that the state associations would be brought into closer contact with the national associations. He referred to *Science* for size and style; it would, to some extent, take the place of the bulletins being issued. He thought that national associations had an opportunity in this promotion to consolidate the pharmaceutical interests. Information is needed on preparations. There should be unison so that the several states can be informed regarding legislation. He suggested that Secretary Kelly explain the project at some time during the session."

J. Lester Hayman was of the opinion "that the publication under consideration should take the place of the *Bulletin* being issued by the N. A. R. D. from Washington. This would be a combined effort of the two national associations; there would be no advertising in the proposed publication."

J. G. Beard said "it would require some salesmanship to make the proposition acceptable in North Carolina; he would be met by the statement 'we are a little hard pressed.' He hoped the proposition could be handled by an equal division of the necessary funds."

Roy S. Warnack stated: "We get the *N. A. R. D. Journal*, giving most of the news and most of the information concerning legislative matter. We get the A. PH. A. JOURNAL. Then in the interim we come to realize the necessity of furnishing timely information to the secretaries with the result that we are getting a very splendid service now from the N. A. R. D. I don't know what advantage would be gained by all of the members receiving that *Bulletin* from the N. A. R. D. at the present time. It is very helpful to the association secretaries. It would take an appropriation of $500.00 to get the approval of all the various associations throughout the country. I don't know what would be accomplished by a joint organization except to make a mutually friendly and coöperative spirit. If this sheet were to come out monthly or semi-monthly it would not give us the timely news, which we need. California issues its own bulletin. That state bulletin is sent out as an enclosure with the sheets from the two major associations. Timeliness is the main thing and we get it out while the news is hot."

R. C. Wilson said that "perhaps there are 60,000, in round numbers, drug stores in the United States. The total membership of the A. PH. A. and N. A. R. D. is approximately 25,000. My view is that this proposition was aimed primarily at those who don't get any pharmaceutical literature. It has been my observation that the average druggist reads less than those of any other group I know about. If we can get them to read something, it would be worth while, whatever the expenditure. It is the 50% that receive no literature that I was thinking about, and it gives an opportunity for the sale of full membership in the N. A. R. D. and the A. PH. A., too."

E. F. Kelly, after explaining the tentative plans for the publication, presented the following: "I move that the Conference of Pharmaceutical Association Secretaries express its approval of the effort of the AMERICAN PHARMACEUTICAL ASSOCIATION to issue a popular professional publication to be available to the members of the state associations."

Motion seconded and carried.

R. C. Wilson presented the following: "I wish to make a motion to go on record as approving and thanking the N. A. R. D. for the legislative bulletin issued by the Washington N. A. R. D. representative to state associations, and we bespeak its continuance."

Motion seconded and carried.

CONTINUATION OF THE DISCUSSION ON THE SECRETARY'S OBLIGATION.

Mr. Warnack.—"The Secretary's obligation to the Industry and Profession in sponsoring state and national legislation is very concrete. The Secretary is blamed for the failure of legislation but he does not receive much credit for its success. As a matter of fact I don't think he should, although the idea might have come from his own fertile brain.

"The Secretary has a definite obligation to the national organizations in an abstract way and he has a concrete obligation to every state association and every druggist within his state. His duties are very definite.

"The success of his position depends on how ardently he pursues the duties given to him. If he owns a store, he has a vital interest in the legislature, because he has to live and work under the terms of the bills which are passed.

"His first obligation is to his state, but when the legislation has proved to be sound he feels obligated to carry this to the nation. Very often the legislative committee will find itself at a state legislature in the midst of legislation which it finds must be sponsored because often there is legislation introduced during the session of which they have no knowledge before going to the capitol. They spring it on you when you know nothing about it.

"Sound legislation offers a better opportunity for success, if you are going to introduce it yourself. Such progress usually takes the form of the introduction of resolutions either by an individual, or local organization at the state conventions. These in turn, if acted upon favorably, become a mandate upon the association to carry out.

"Referring to our California legislation which has caused much comment, our Fair Trade Act—I think that resolution was introduced by F. E. Mortenson at the 1931 meeting. Caused a lot of talk and the resolution was adopted. That particular bill and several others suggested at that time were carefully worked out; a legislative committee was appointed and the bills were then taken to the capitol.

"A great deal depends, of course, upon the legislative committee and the Secretary. It is my opinion that, if they work, they should not be subject to change as other officers. They get to know

the methods of the capitol and can carry proposals through. We have been fortunate because Messrs. Mortenson and Lenehan have had a great deal of experience with the ins and outs of the capitol and know how to go about the work for the best results. When you have men of that type, they should be retained. They know legislative procedures and they stay at the post until after the legislature closes, because sometimes they have to convince the Governor that he should sign enacted bills.

"That gives you an insight on the method that we have employed to secure state legislation. When bills are taken to the national capitol, the obligation is placed upon the secretaries to carry them through. It is a very definite obligation. It places much work on the secretaries but I think it is an obligation they should assume.

"The method that this form of obligation took with reference to the Fair Trade Act was that after it was enacted we carried it through the courts and made all information concerning it available to the N. A. R. D.

"There were two or three factors responsible for carrying this through to a successful completion. The first thing was to supply all the states with copies of the bill and a primary letter explaining the need for it. The next step was to supply information concerning arguments for the bill and how it might be carried through.

"Mr. Mortenson did much research work for it and made multigraphed copies and sent them to all the states interested in the Fair Trade Acts.

"Another factor was Mr. Henry, president of the N. A. R. D., who was traveling over the country attending state conventions. I am satisfied that his talk before state bodies when they were wavering was responsible for at least two states getting theirs through. The third phase of the work—many of the states were floundering around and did not know what to do with it—did not know how to get the manufacturers to act, what form of contracts to use, what was legal and what was not.

"The N. A. R. D. asked me to help—I prepared a folder making it as brief as possible but retaining the essential facts. I sent this to the N. A. R. D., thinking they would use it in the *Journal*, but they published it in bulletin form and distributed it to all the states operating under the Fair Trade Acts and sent it to every Senator and every Congressman; some copies were sold to manufacturers and the legal profession.

"I think that secretaries can automatically become burden-bearers—I think it is a duty they owe to the profession, because the more we have, the more we should give."

In the absence of Secretary J. W. Slocum, of Iowa, the chairman called on Charles J. Clayton to lead a discussion assigned to Mr. Slocum, "The Secretaries' Obligation to the Industry in Promoting Sound Business and Fair Trade Practices."

Mr. Clayton said in part: "Such business as we have would indicate that it is a desirability. We don't know how many prescriptions are written in the United States. A few years ago there was a survey in Maryland which showed that there were written annually possibly three prescriptions per capita. In the St. Louis Drug Survey it showed one and a half per capita in that district. I think about half way would mean 281,000,000 prescriptions a year, and if those were divided equally among 60,000 drug stores, that is over 4500 prescriptions per year per state. I would say that for many stores there is far greater opportunity for gain in securing the prescription practice than there is in trying to meet the prices of every one who sells merchandise as low as he can. The point I want to make is that there are a lot of druggists who are just forgetting about prescriptions—they forget that is a line they might get at a good price if they would.

"There are many stores in small towns where the doctors do their own dispensing and even in the large cities many doctors do so. There are many druggists who for one reason or another will make no effort to secure prescription practice; consequently the total number will be divided not among 60,000 stores but not even among half that number. I think that the way back to prosperity for many stores is not commercially but professionally. 'Back to Pharmacy' would be a good motto for many retail druggists to adopt."

R. C. Wilson.—"I have had theories about this proposition of the professional work in the drug store. Mr. Clayton has expressed it adequately. He has said in a few words all that I might have said if I had talked at considerable length. We are going to attempt in Georgia, this association year, this sort of a proposition. We have been able to finance a full-time secretary whose duties will be to go over the state. Whether I will have an official connection with the

association I can't say definitely at this time. Theoretically I am at this time what they call an executive secretary. We outlined this sort of a campaign for this man to put across.

"He is going into the drug stores of the state to sell membership in the association. He is going to try to interest druggists in the manufacture of pharmaceuticals—U. S. P. and N. F.—supply themselves with the proper equipment, where it is lacking, as it is in a good many places. We are going to try to get each druggist to put in a library for his own reference and for the doctors of the community. Also to arrange for discussions before every group of doctors in the state, county and district societies, on U. S. P. and N. F. preparations and try to impress upon them the fact that the doctor himself has come to be a medium through which our most popular proprietary products are placed on the markets. By his prescribing them or telling people to get them, he is establishing a demand constantly for those proprietary products which are now in the hands of cutters, department stores and other places. We will endeavor to persuade these doctors to write prescriptions on official products, the price of which we can control, and impress him with the fact that he is the medium through which the proprietary medicines are being introduced to the public. Some of our most popular products are being cut to-day in a way so there is no profit whatever. We propose to bring that condition squarely before the medical profession. If we can't sell them, we are going to try to explain to the people of our state the fact that the high cost of medicine and medical care is a proposition for which the doctor is himself responsible. I have three or four engagements already to go before district groups in the state, where there will be 250 to 300 doctors and there will be druggists present. I am going to talk to them of their failure to prepare, endorse and support the U. S. P. and N. F. products. I think if you will give us a year and then let me report to you, it will be more interesting than any theory I might present at this time."

Mr. Yeomans.—"It was my pleasure to inaugurate the U. S. P. and N. F. campaign in Chicago which I think was the first real organized campaign put over in the United States. Chairman Sisson of the U. S. P. and N. F. committee in charge, was on that original committee and is still carrying on in the organization. The group which was representative of Cook County, met regularly and did some very constructive work. We held joint meetings of physicians, dentists and druggists, and within a few months that made a very noticeable increase of such prescriptions in Chicago. The work was carried on up to the time of the War and through the great changes undergoing in pharmacy at the time, the work was temporarily abandoned but has since been reorganized with growing satisfaction."

Frank Nau, Portland.—"I hope you heard the paper by E. Fullerton Cook relative to getting together and making a study of professional pharmacies. I think the time is ripe for cooperation between the different groups that are interested. We have pharmacists in Portland who have improved their prescription departments and are using every effort to bring back the professional end of the business. These men, grouped together in the city of Portland, about 75 or 80, have been attempting to contact the physicians and the dentists and we have progressed. In our new pharmacy law we put in the U. S. P. and N. F. requirements as to label. The preparations must be by a graduate druggist who studies four years and learns how to manufacture U. S. P. and N. F. products. If he then sells ham sandwiches he will buy his U. S. P. products. He should know how to manufacture them and if he will do that he will cut his cost and be more interested in them."

It was moved that the meeting be adjourned.—Carried and the meeting adjourned at 11:30, A.M.

EDITOR'S NOTE: We are thankful for President F. V. McCullough's help in preparing this report.

TVA DECISION.

The *Washington Post* in an editorial comments that "aside from the legal points which it clarified, the Supreme Court's so-called TVA decision has served a most useful purpose. For it clearly demonstrates that this high tribunal is only concerned with fair and accurate interpretation of the Constitution and not with the promulgation of any economic theories or social philosophy. That aspect of the decision should do more than anything else to end the campaign for limitation of the court's authority as the arbiter and guardian of the fundamental law."

ISOPROPYL ALCOHOL BANNED.

The use of isopropyl alcohol as a rubbing alcohol, in such a way as to mislead the consumer into thinking he is receiving ethyl alcohol, is forbidden by the Food and Drug Administration.

ASSOCIATION BUSINESS

AD INTERIM BUSINESS OF THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION 1935–1936.

Office of the Secretary, 2215 Constitution Avenue, Washington, D. C.

LETTER NO. 12.

February 7, 1936.

To the Members of the Council:

81. Minutes of the Meeting of the Council on December 5, 1935. Motion No. 32 (Council Letter No. 11, page 58) has been carried and the minutes are approved as corrected.

82. Bequest of Dr. Frederick B. Kilmer. Motion No. 33 (Council Letter No. 11, page 59) has been carried. The release has been executed by the secretary and the bequest has been paid.

83. Contract for Printing and Mailing the Journal for 1936. Motion No. 34 (Council Letter No. 11, page 59) has been carried and the contract is awarded to the Mack Printing Company.

84. Budget for 1936. Motion No. 35 (Council Letter No. 11, page 61) has been carried and the budget is approved as submitted. Dr. Fischelis voted "no."

85. Selection of Auditors. Motion No. 36 (Council Letter No. 11, page 62) has been carried and W. A. Johnson & Co. are selected to audit the accounts of the Association for 1935.

86. Election of Members. Motion No. 37 (Council Letter No. 11, page 62) has been carried and applicants for membership numbered 135 to 173, inclusive, are declared elected.

87. Proposed Publication. The following letter has been received from H. A. B. Dunning:

> "I note in Council Letter, No. 11, 1935–1936, page 59, that I have been appointed by Chairman Hilton as a member of the Committee on Ways and Means to provide for the proposed publication, as outlined in Council Letter No. 10, page 1109.
>
> "I am entirely in favor of the proposed study by the Committee on Contents, Scope and Style, R. L. Swain, *Chairman*, and also the investigation by the Committee on Ways and Means, C. W. Holton, *Chairman*, and am deeply interested and hope for a successful issue. I do not, however, believe that I should be a member of the Committee on Ways and Means and am, therefore, declining the appointment.
>
> "You can be assured of my interest and coöperation in promoting the progress of the entire plan."

and Chairman Hilton has appointed H. C. Christensen a member of the Committee on Ways and Means to fill the vacancy.

88. Use of Text of N. F. VI. Requests for permission to use the text for partial reproduction have been received from Dr. Herman Goodman in a book on the Use of Drugs in Modern Cosmetics and the Treatment of Common Skin Diseases; from the Tennessee School of Pharmacy in mimeographed notes for their students, and from Professor George W. Fiero in a revision of his book "Review of Pharmacy."

These requests with samples of the manuscript were submitted to Chairman DuMez of the Committee on Publications and it is recommended that the requests be granted with the usual charge of $5.00.

(*Motion No. 38*) It is moved by DuMez that permission be granted to Dr. Herman Goodman; to the Tennessee Pharmacy School and to Professor George W. Fiero, to use the text of the N. F. VI for partial reproduction, respectively, in the publications mentioned above under the usual conditions and at a charge of $5.00 in each case.

89. Applicants for Membership. The following applications properly endorsed and accompanied by the first year's dues have been received:

No. 174, Mrs. Theodore M. Edison, Llewellyn Park, West Orange, N. J.; No. 175, Anthony William Anriola, 4 Ravine Ave., Nutley, N. J.; No. 176, Michael Anthony Dente, 180 Main Ave., Vineland, N. J.; No. 177, Bernard P. McNamara, 302 N. Ellwood Ave., Baltimore, Md.;

No. 178, Carroll P. Foster, 3036 E. Monument St., Baltimore, Md.; No. 179, Bertram Kamber, 2402 Lakeview Ave., Baltimore, Md.; No. 180, Raymond F. X. James, Library, Fordham University, New York, N. Y.; No. 181, Israel Dan Fiertel, 775 Jennings St., New York, N. Y.; No. 182, J. H. Barnett, 117 E. Potomac St., Brunswick, Md.; No. 183, Oscar Loddy, 835 Main St., Fitchburg, Mass.; No. 184, Charles A. Heyl, 22 W. 9th St., Erie, Pa.; No. 185, Donald Albin Wallace, 8134 McCormick Blvd., Chicago, Ill.; No. 186, John R. McClelland, 130 Bristol, New Haven, Conn.; No. 187, J. K. Kohser, 542 N. Pine Ave., Chicago, Ill.; No. 188, Ray M. Anderson, 708 E. Second St., Merrill, Wis.; No. 189, Samuel David Goldberg, 2923 Atlantic Ave., Brooklyn, N. Y.; No. 190, Ralph J. Mill, 625 Mullett St., Detroit, Mich.; No. 191, Valentine F. Greene, 18 Kensington Ave., Jersey City, N. J.; No. 192, Harold DeWitt Goulden, 57 Cobane Terrace, West Orange, N. J.; No. 193, Frank Joseph Korinek, 1852 S. Scoville Ave., Berwyn, Ill.; No. 194, Arthur Garfield Raiche, 425 E. Wisconsin Ave., Milwaukee, Wis.; No. 195, Wood Wheeler Goble, 403 Eddy Ave., Missoula, Mont.; No. 196, John Pasternacki, Virginia, Minn.; No. 197, Beal S. Alstodt, 111-73 145th St., Jamaica, L. I., N. Y.; No. 198, Arthur Phillip Hess, 112 E. Broad St., Elyria, Ohio; No. 199, Oswald H. Rotho, 210 Littleton Ave., Newark, N. J.; No. 200, Robert R. Gilmore, 2095 Honeywell Ave., Bronx, New York, N. Y.; No. 201, Elder Charles Gauthier, Station Hospital, Fort Missoula, Mont.

(*Motion No. 39*) Vote on applications for membership in the AMERICAN PHARMACEUTICAL ASSOCIATION.

E. F. KELLY, *Secretary.*

THE HEADQUARTERS BUILDING.

In *The Sunday Star*, Washington, D. C., there is an interesting discussion pertaining to the location of the Administration Building for the Pan-American Union, relative to which there has been some discussion by Secretary Ickes and the President and the Fine Arts Commission.

The Sunday Star states that back of the argument are more than thirty-five years of history. As long ago as 1901 it was suggested that Constitution Ave. should be laid out as a marble thoroughfare leading to the Arlington Bridge. Gradually the plan is progressing. The Lincoln Memorial and the Memorial Bridge, the National Academy of Sciences and the building of the AMERICAN PHARMACEUTICAL ASSOCIATION, each a masterpiece of architectural design, were successive steps in what the Fine Arts Commission has considered the right direction.

Comparatively recently the land between 18th and 19th Streets, C Street north to E Street, was appropriated for a new Interior Building, now under construction, and it is regarding this construction that there is argument. In discussing the matter, Dr. Charles Moore refers to the section in which the AMERICAN INSTITUTE OF PHARMACY is located and it is the only part of the argument to which reference will be made and this only in reference to the Pharmacy Building.

"For the past ten or twelve years the plan of flanking the Lincoln Memorial with a series of white marble semi-public buildings has been in progress. The A. PH. A. Building and the National Academy of Sciences, both land and buildings paid for from their own funds. The Public Health Service Building is a government building. When the AMERICAN PHARMACEUTICAL ASSOCIATION bought lots in the center of the square between 22nd and 23rd Streets it was insisted that an entire frontage facing Constitution Ave. be purchased and thereon be constructed a marble building, advancing it from the line of the Science Building in order to enhance its individuality; the center one of the five spaces between 17th and 23rd Streets was purchased by the Federal Reserve Board; again marble was required, and again to give this important building special significance."

The AMERICAN PHARMACEUTICAL ASSOCIATION has met every request and has the full support of all concerned. Dr. Charles Moore's support is highly valued.

James E. Hancock, Baltimore pharmacist, president of the Society of the War of 1812, has been delivering addresses before various organizations and over the radio to arouse interest in the movement to bring the frigate Constellation back to Baltimore. The launching of the Constellation in Baltimore, September 7, 1797, practically marks the beginning of the U. S. Navy.

EDITORIAL NOTES

AN APPRECIATION.

Hon. Albert C. Ritchie, a foremost citizen, statesman, governor of Maryland for four terms, died February 24th. It is not for us to speak of his achievements in national and state affairs but of his recognition of pharmacy, always ready to commend the profession as important in public health service. He was a speaker at the Baltimore meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION and his Pharmacy Week messages expressed his appreciation of pharmacy. During his administration the building for the University of Maryland School of Pharmacy was constructed; he, actively, supported representation of pharmacy on the Board of Health and in few states, if any, is pharmacy better represented, due to his influence and support. His valuation of pharmacy is in evidence; pharmacists mourn his passing and join in paying tribute to a great American citizen.

"THE THERAPY OF THE COOK COUNTY HOSPITAL."

In the *Journal of the American Medical Association*, of February 1st, there is another contribution by Dr. Bernard Fantus on the above-named subject. In their elaboration these articles are submitted to the members of the attending staff of the Cook County Hospital by the Director of Therapeutics, Dr. Bernard Fantus. These articles are a source of valuable information for pharmacists and should be carefully studied by them. The subject referred to is entitled, "The Therapy of Coughs," relative to which pharmacists should be informed; sixteen prescriptions are discussed at length, whereby the important fact is impressed that one preparation cannot serve in the treatment of all coughs. Dr. Fantus presents a study of the prescriptions under a number of headings such as—*the Useful Cough, the Tight Cough, the Loose Cough, the Useless Cough, the Chronic Cough;* thereby pharmacists may obtain necessary information.

The contributions of Dr. Fantus are of great value to physicians and impress them with the importance of judgment in prescribing, and pharmacists may gain a better understanding relative to some phase of dispensing and, perhaps, of their obligations. As a result there is the opportunity of coöperation for better service.

Prescribing and dispensing offer opportunities for mutual coöperation between physicians and pharmacists.

PERSONAL AND NEWS ITEMS.

The retirement of **Dr. Reid Hunt,** since 1913 professor of pharmacology at Harvard Medical School, Boston, has been announced. He served in the University of Maryland School of Medicine in 1896, and after two years as tutor in physiology at the College of Physicians and Surgeons (Columbia), New York, at Johns Hopkins University School of Medicine until 1903 as associate and as associate professor of pharmacology. He was chief of the division of pharmacology of the U. S. Public Health Service from 1904 until 1913. In 1923 he was visiting professor to Peking-Union Medical College and from 1920 to 1930 president of the U. S. Pharmacopœial Convention. He was chairman of the Section of Pharmacology and Therapeutics of the American Medical Association in 1908–1909–1910, a member of the House of Delegates in 1911–1912 and has been a member of the Council on Pharmacy and Chemistry of the Association since its inception in 1905. He succeeded Dr. George H. Simmons as chairman of the Council in 1927. His investigations have been of the first order and have found ready recognition both in America and in Europe, and he has contributed much to the literature on his specialty. Dr. Hunt's plans for the future were not announced.—Through the *Journal of the American Medical Association.*

Col. Wallace DeWitt has been appointed assistant to the surgeon general of the U. S. Army, Major Gen. Charles R. Reynolds, with the rank of brigadier general, succeeding Brigadier General Matthew Delaney, who retired November 30th.

We have received from **Dr. Roland E. Kremers** the following Semi-Annual Reports of Schimmel & Co.: October 1900 and October 1901; April and May 1903; April and May 1906; April 1907; April 1909; April 1911; April 1914; October 1914 to April 1915; October 1915; annual 1921. *Bericht*, Schimmel & Co.: April 1921; edition 1923; edition 1928; Centenary Volume 1929; annual 1929, 1930, 1931.

In appreciation of his many years of constructive service to pharmacy, **J. H. Haughton,** secretary of the Florida State Board of Pharmacy for the past eighteen years, president of the

Florida State Pharmaceutical Association during the fiscal year 1931–1932, and secretary of the same association from 1907 to 1925, was initiated as an honorary member of Iota Chapter, Rho Chi, Society of the School of Pharmacy, University of Florida, at its ninth annual banquet held at Gainesville, Monday evening, January 13th. Mr. Haughton was initiated into the society by W. M. Hankins, of Daytona Beach, also an honorary member.

The toastmaster of the evening was Dr. B. V. Christensen, director of the School of Pharmacy.

Dr. Albert L. Raymond, for nine years associated with the Rockefeller Institute of Medical Research, has been appointed director of the Research Laboratories of G. D. Searle & Co., Chicago.

Dean Frederick J. Wulling was tendered a life-time chairmanship of the scientific and practical section of the Minnesota State Pharmaceutical Association at the closing session of its fifty-second annual convention. The Dean has been head of the College of Pharmacy since its inception in 1892.

The Veteran Druggists Association of Baltimore elected **F. C. Purdum,** President, and **George A. Bunting,** Vice-President.

Creighton University has presented a plaque to **Howard Chamberlain Newton** "in grateful recognition of the loyal and efficient service, professor of pharmacy from 1914–1935 and dean of the College of Pharmacy, 1916–1935." Professor Newton is now a member of the faculty of the Massachusetts College of Pharmacy.

The **University of Cincinnati** has announced a new application of the University's cooperative system of technical training to begin in September. Students will spend alternate periods in industrial plants and at the University. During each of the two University periods they will receive a $500.00 fellowship and free tuition. The fellowship and the pay received in industry will amount to about $1000.00 a year.

OBITUARY.

MRS. EMILY TAPPEN FAIRCHILD.

Mrs. Emily Tappen Fairchild, widow of Samuel W. Fairchild who founded the firm of Fairchild Brothers, pharmaceutical manufacturers, now the Fairchild Brothers & Foster Company, died at her home in New York, February 19th, after several months' illness. She was eighty-two years old.

The late Samuel W. Fairchild founded the Fairchild Scholarship.

WALTER J. STURGEON.

Walter J. Sturgeon, member of the AMERICAN PHARMACEUTICAL ASSOCIATION, who for almost half a century was one of Kittanning's (Pennsylvania) most prominent citizens, passed away in Johns Hopkins Hospital, Baltimore, Md., on January 23, 1936, following an illness from pneumonia.

For forty-nine years, until September 1934, Mr. Sturgeon conducted Sturgeon's Drug Store on Market Street, and he enjoyed an exceptionally wide acquaintance not only in the local community but in the entire state. He took an active interest in drug association affairs, and was a member of the National Association of Retail Druggists, having been identified with that organization since its inception. He was also a member of the Pennsylvania Pharmaceutical Association since 1900, and served as its president (1920–1921). In 1931 Mr. Sturgeon was elected to Life Membership. He is survived by his widow.

GEORGE L. RAPPORT.

Dr. George L. Rapport, prominent in Connecticut Pharmacy, member of the AMERICAN PHARMACEUTICAL ASSOCIATION, died at his home in Hartford, February 1st, aged sixty years. He was one of the founders of the Connecticut College of Pharmacy and untiring in his efforts in behalf of the institution. For many years, he was a member of the board of trustees and treasurer of the College. In recognition of his accomplishments in pharmacy, the Connecticut College of Pharmacy, in 1933, conferred upon him the honorary degree of Doctor of Pharmacy. He was a former commissioner of pharmacy and a Past-President of the Connecticut Pharmaceutical Association.

Dr. Rapport was born in Russia on January 18, 1876; part of his earlier education was received in Vienna, before coming to the United States in 1892. After attending Bacon Academy in Connecticut he enrolled in the College of Pharmacy of the City of New York where he was graduated in 1894. After his graduation,

until 1915, he conducted a pharmacy in Hartford. For a period of three years he directed the courses in pharmacy at the Hillyer Institute of the Hartford Y. M. C. A.

The funeral was largely attended by pharmacists from all parts of the State. Dr. Rapport is survived by his wife and two sons—Richard, assistant to the State Banking Commissioner, and Professor Victor A. Rapport, of the Connecticut State College.

LAFAYETTE BENEDICT MENDEL.

Dr. LaFayette Benedict Mendel, Sterling professor of physiological chemistry in Yale University, died on December 9, 1935, after an illness of eighteen months. He was born at Delhi, New York, on February 5, 1872, and received both his undergraduate and graduate training at Yale, where he was awarded the degree of A.B. in 1891, and that of Ph.D. in 1893.

LEGAL AND LEGISLATIVE.

EXTRA NEW JERSEY PRESCRIPTION TEST SCHEDULED.

Two examinations in place of the one originally scheduled prior to June 1st by the New Jersey Board of Pharmacy will be held on February 27th. The second examination will follow on May 14th. Dr. Fischelis explains that changes in the registration requirements which will become effective in New Jersey on July 1st, coupled with the change from a minimum 4-year course and the advent of the new revisions of the U. S. Pharmacopœia and National Formulary, which become official on June 1st, have led the Board to arrange for the two examinations.

VIRGINIA LEGISLATION.

Three bills providing for the regulation of drugs have been introduced in the General Assembly of Virginia by Senator G. E. Heller, Bedford druggist, and Senator J. W. Whitten, of Tazewell.

One of these bills would prohibit the distribution of drugs and medicines by medicine shows; another would provide for the inspection of drugs; and a third would provide for the regulation of the manufacture of drugs, medicines and cosmetics, with registered pharmacies excepted. In all of these bills the State Board of Pharmacy would be the regulatory body.

DISTRICT OF COLUMBIA.

S. 3514 has been reported to the Senate, with amendment proposing to regulate the manufacture, dispensing, sale and possession of narcotic drugs in the District of Columbia (S. Rept. 1538). H. R. 8437 has been reported to the Senate, without amendment, directing the Commission on Licensure to Practice the Healing Art in the District of Columbia to issue a license to Dr. Arthur B. Walker.—*Jour. A. M. A.*, February 22nd.

SUPREME COURT HOLDS CORPORATE PRACTICE OF MEDICINE ILLEGAL.

The Supreme Court of Illinois, February 14th, in People *vs.* United Medical Service, Inc., held that a corporation cannot legally practice medicine in Illinois even though it attempts to do so through physician-employees. It accordingly affirmed a judgment rendered by Judge M. L. McKinley, of the Superior Court, Cook County, March 1935, ousting the United Medical Service Corporation from "the franchise occupation and business" of engaging in the diagnosis and treatment of human ailments. According to the *Chicago Tribune*, February 14th, an attempt will be made to reorganize the corporation on a partnership basis, in the hope of avoiding legal difficulties. It is intimated, however, that before attempting such a reorganization the corporation may ask for a rehearing from the Supreme Court of Illinois and appeal, if possible, to the Supreme Court of the U. S.

LOUISIANA DRUG CONTROL ACT.

(*a*) No drug retailer shall use advertising, whether printed, radio or display or of any other nature, which is intentionally inaccurate in any material particular or misrepresents merchandise in respect to its use, trade-mark, grade, quality, quantity, size, origin, material content or preparation; and no drug retailer shall use advertising or selling methods which tend to deceive or mislead the customer.

(*b*) No drug retailer shall use advertising which refers inaccurately, in any material particular, to any competitor or his merchandise, prices, values, credit terms, policies or services.

(*c*) No drug retailer shall use advertising which lays claim to a policy or a continuing practice of generally underselling competitors.

(*d*) No drug retailer shall secretly give anything of value to a customer or to the employee or agent of a customer for the purpose of influencing a bill or statement of account to the employee agent or customer which is inaccurate in any material particular.

(*e*) No drug retailer shall sell or offer for sale any merchandise upon a condition which involves a lottery, gamble or other element of chance.

(*f*) No drug retailer shall permit any demonstrator or sales employee whose salary is wholly or partially paid by a manufacturer or distributor to work in his establishment, unless such demonstrator or sales employee is clearly and openly identified as the agent of such manufacturer or distributor.

SECTION III.

No drug retailer shall sell any drugs, medicines, cosmetics, toilet preparations or drug sundries at a price below the manufacturer's wholesale list price per dozen, nor, in the case of biologicals or other of the above-mentioned products which are not customarily sold in dozens of greater lots, sell such products at less than the manufacturer's wholesale list price per unit, plus a per cent to represent averaged overhead expenses, which is to be arrived at arbitrarily in the manner hereinafter set forth and which is to be subject to amendment as dictated from time to time by accumulating experience.

SECTION IV.

The Louisiana State Board of Pharmacy is hereby designated as the Board of Arbitration to carry out the provisions hereinabove set forth in Section III of the Act.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS.

Discovery last Summer of large deposits of glauber salt, estimated to total 20,000,000 tons, in the northwestern part of North Dakota by Federal relief workers, was reported during the sessions of the American Institute of Mining and Metallurgical Engineers, held in the Engineering Societies Building, New York, February 17th to 21st. The report was presented by Prof. Irvin Lavine and Herman Feinstein of the University of North Dakota. The discovery was made, the report said, as the result of a survey confined primarily to three counties. Eight deposits in all were discovered and the survey provided work for sixty-eight men from relief rolls and in addition gave employment to a number of graduate engineers.

BOOK NOTICES AND REVIEWS.

The American Illustrated Medical Dictionary. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. NEWMAN DORLAND, A.M., M.D., F.A.C.S., Lieut. Colonel M.R.C., U. S. Army, with the collaboration of E. C. L. MILLER, M.D. Seventeenth edition. Fabrikoid. Price $7.00; Thumb index, $7.50; 1573 pages, with 945 illustrations. Philadelphia & London: W. B. Saunders Company, 1935.

There are more than *5000 new words* alone in the *New (17th) Edition*. The Terminology conforms to the standards of the American Medical Association, Society of American Bacteriologists, American Chemical Society, the B. N. A. and other scientific bodies which adopted definite standards. It gives the pronunciation of *every word*—not just the accent. The derivation of words is a feature. It gives consideration to the historical aspect of words—name of discoverer or originator, with date. It gives chemical symbols and chemical formulas.

All recognized signs and symptoms of diagnostic value, particularly the *new ones*, are included, the technique of elicitation stated and the significance indicated.

The Dosage and Therapeutic Table is comprehensive, covering 37 pages arranged alphabetically. Dental and Veterinary Terms are defined.

Medical Biographies are brief, but a source of ready information. There are 945 illustrations, more than one hundred in color.

The Dictionary has gone through many revisions since 1900, and, in each of them, the information has kept pace with progress. Only few references are given as the Dictionary has been a standard for many years and is a library essential.

Grundriss der Geschichte der Deutschen Pharmazie. (The history of German pharmacy.) By A. ADLUNG, Ph.D., State Apothecary and member of the German Department of Health, and George Urdang, Sc.D., honorary member of the AMERICAN PHARMACEUTICAL ASSOCIATION—for sketch see page 1259, December JOURNAL for 1932. Prepared, because of

the encouragement by the Society for the History of Pharmacy and the support of the German pharmaceutical profession. The work is dedicated to Hermann Schelenz. Price R.M. 28; published by Julius Springer, Berlin, Germany.

This comprehensive historical review of the history of German pharmacy, of 647 pages, is a most valuable work and should be placed in libraries relating to pharmacy. The Introductory depicts the early history and the relation to the present status of pharmacy. The first division deals with activities and the 15 subjects review systematically the legal phases, the apothecary's oath, reforms, the activities within the pharmacy and outside relationships, dealing with the dispensing of drugs other than in the apotheke; the personnel, relation to physicians, the hospital pharmacy, the publications and military pharmacy.

The second division is concerned with the development of pharmacy herbals, household remedies, etc. The third section discusses technical subjects, measuring and weighing. The fourth division speaks of pharmacists in discoveries, as citizens, etc. The concluding chapter is largely devoted to the library, forms of medication, discoveries, the industry, discoveries in related fields, as chemistry.

This in a general way, but briefly, gives an idea of the valuable work. Perhaps it would be sufficient to refer to the author, George Urdang, with whom American pharmacists are acquainted through his activities and writings, to which reference was made in the sketch appearing in the JOURNAL A. PH. A. for 1932. His ability and thoroughness bespeaks for the volume a place in the libraries as a reference book. It is a German print, but pharmacy is not limited by language and the publication will be welcomed as an outstanding work relating to the history of pharmacy. The indexes of more than 130 pages include references to materia medica, educational institutions, publications of early and later periods, writers, research workers, etc.

The authors express the hope that pharmacists elsewhere will write histories of pharmacy in their respective countries.

Incompatibilities in Prescriptions, sixth edition. By EDSEL A. RUDDIMAN, Ph.M., M.D., formerly professor of Pharmacy, Vanderbilt University, Research Chemist with Ford Motor Company—Adley B. Nichols, Phar.D., B.Sc., assistant professor in Operative Pharmacy, Philadelphia College of Pharmacy and Science. Publishers, John Wiley & Sons, Inc., New York. Price $2.75.

Former editions have been extensively used in colleges of pharmacy. Numerous unofficial substances have been added but such substances have only been included if considered of marked importance. Many incompatibilities have been considered in preparations that may vary considerably from time to time.

Part I has been thoroughly revised and considerable revision was made in Part II; to this about 170 prescriptions have been added.

The work is well and favorably known and no further comment is necessary; at this time no close study has been made of the examples given and, therefore, no prescriptions are discussed in this notice. The co-author, Adley B. Nichols, has been active in revision work and is known also for the exhibits of U. S. P. and N. F. preparations at state and national medical and pharmaceutical association conventions.

"The Extra Pharmacopœia of Martindale & Westcott. Vol. II. 20th edition. $6^3/_8$ in. by $3^3/_4$ in. Pp. 889; 22s. 6d. The Pharmaceutical Press, 23 Bloomsbury Square, London W. C. 1; H. K. Lewis & Co., Ltd., 136 Gower St., W. C. 1; The preface sets forth the principal changes that have been made in compiling this edition. The section relating to the analytical notes on the chemicals and materia medica of Volume I has, for all practical purposes, been entirely rewritten. The revision of the pages dealing with nutrition has been extensive, as might be expected. The sections on water analysis and on sterilization have been completely rewritten. Further formulas of proprietary medicines are included. The Analytical Addenda to Chemicals and Materia Medica in Volume I occupy 204 pages, a fact indicating the importance of possessing the complete work. The typography appears to us an improvement on that of previous editions. Tables and glossaries complete the information given, as from the first appearance of the book, in a condensed and readable form."—*The Chemist and Druggist*, November 2, 1935.

We regret very much to advise that our fellow-member, **W. Bruce Philip,** has been quite ill for a time and is in Garfield Hospital, Washington. He is improving slowly and we hope will soon be quite well again. **Mrs. Philip** returned from California to be with her husband.